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CATALOGUE  
OF  
SCIENTIFIC PAPERS  
1800—1900

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SUBJECT INDEX

VOLUME I

PURE MATHEMATICS

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ROYAL SOCIETY OF LONDON

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PURE MATHEMATICS

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*Prof. Greenough  
Cambridge*

ARRANGED FOR A COMMITTEE OF THE ROYAL SOCIETY  
UNDER THE SUPERINTENDENCE OF

**HERBERT M<sup>C</sup>LEOD, LL.D., F.R.S.**

DIRECTOR OF THE CATALOGUE

with the assistance of

**R. J. DALLAS, M.A.**

KING'S COLLEGE, CAMBRIDGE

## PREFACE

**W**HEN the plan for a Catalogue of Scientific Papers was drawn up in 1857 by the Royal Society, it was also contemplated that a Subject Index to the papers should be made. During the compilation of the well known twelve volumes of the Catalogue of Authors (1800—1883) much material was collected for the Subject Index by the Committee of the Society which had charge of the work, but nothing was printed.

In 1898 it was determined to undertake the continuation for the period 1884—1900, and at the same time to prepare material for a Subject Index for these last seventeen years of the century. It was afterwards decided that one Index should be made to the papers of the whole of the Nineteenth Century; and to bring this Index into relation with the International Catalogue of Scientific Literature, which deals with publications subsequent to 1900, the Index was to be arranged in accordance with the schedules of the different sciences which form the basis of the International Catalogue.

The extent of the work for the period 1884—1900 proved to be so great that the resources of the Royal Society would have been quite inadequate for its completion. Its continuation has been made possible by liberal donations received from various sources. The Catalogue is especially indebted to Dr Ludwig Mond, F.R.S., a member of the Committee entrusted with its preparation, who has encouraged and forwarded its progress in every way for many years past; in particular, in addition to similar generous donations at earlier stages, Dr Mond recently undertook to provide an extremely liberal subsidy during the three years 1907—9, which has enabled the work to be pressed forward rapidly.

The Subject Index will be published as separate Index-volumes for each of the seventeen Sciences of the Schedules of the International Catalogue, viz. Mathematics, Mechanics, Physics, Chemistry, Astronomy, Meteorology, Mineralogy, Geology, Geography, Palaeontology, Biology, Botany, Zoology, Anatomy, Anthropology, Physiology, and Bacteriology.

The practical advantage which will accrue from thus classifying the literature of each Science seems to be amply sufficient, in spite of unavoidable imperfections, to justify the great expense that has been involved. In the past a student interested in a single branch of the subject would probably consult special Treatises and Reports from which he could obtain references to the more important memoirs. But it often happens that such references are transferred simply from one treatise to another, and

## Preface

experience shows that important contributions that have once dropped out of sight may for a long time, or indeed ever afterwards, be overlooked. When the whole literature is set out systematically and exhaustively under appropriate headings as in the present volume, such accidents are guarded against so far as seems to be possible.

The present volume dealing with Pure Mathematics is the first instalment of the Subject Index: it contains 38748 entries referring to 700 serials. It is believed that these entries cover all the contents of the serials indexed with the exception of about 750 short notes (mostly falling under 6810 and 7210) which were not thought of sufficient permanent interest to be entered.

The Index titles for papers published from 1884 to 1900 inclusive have been made by Referees familiar with the subjects, who have consulted the original papers and have made the titles from the contents of the papers and not merely from their headings. It was intended that the Index entries for the papers from 1800 to 1883 should be made from the titles as printed in the Catalogue of Authors, but it was soon found that many of the titles were too indefinite for such minute classification, and reference has had to be made to the original papers in a large number of cases. The latter part of this work was commenced by the late Mr George Griffith of Harrow, whose untimely death was a great loss to the Committee.

The entries in the Index are arranged so that reference can be made to the complete titles in the Catalogue of Scientific Papers. Generally the author's name together with the date will indicate the volume in which the title of the paper may be found. These clues are insufficient when the paper is anonymous or occurs in Volume XII or in the additions to Volume VI. They are also at fault for titles marked with an asterisk showing that they belong to previous volumes; in these cases the number of the volume is given in the Index entry in small Roman numerals within brackets.

When an error has been found in an author's name in the Catalogue, it is corrected in the Index by a reference made to the error.

The Index contains references to some papers of dates earlier than 1884 which were omitted in previous volumes of the Catalogue: these are indicated by an asterisk placed before the date; the full titles of these papers will be given in the continuation of the Catalogue of Authors.

When an author's personal name does not appear in the heading of an original paper, no attempt has been made to find the name for the Index, but this will be done for the Catalogue of Authors.

The Catalogue of Authors for the period 1884 to 1900 is in preparation; the material will not however be quite complete until the Subject Indexes for the various Sciences have been reduced into order.

Entries on the same subject are arranged, so far as possible, in order of

## Preface

date irrespective of the authors' names, with the endeavour to present the subject in the historical form. This grouping of the entries, involving modifications of titles prepared by different Referees, or by the same Referee at different times, has been one of the most difficult problems in the preparation of the Index.

The abbreviations of the names of the serials used in the Royal Society Catalogue have been further shortened for the Index. As the abbreviations are not uniform in all the volumes, it will be found that the same journal may be indicated by several different abbreviations, but in each case the one selected is that which was used in the volume in which the title of the paper occurs.

In the case of serials commencing since 1883, the abbreviations adopted in the International Catalogue have been used as a guide.

The list of serials will, it is hoped, be a valuable feature of the Index. It has been drawn up by the Director and contains the names of 701 serials from which the entries in the Index have been taken. Each title is preceded by the abbreviation which represents the serial in the Index; the date of commencement of the serial is given, and if it is extinct the date of the last volume is added. There are appended symbols representing the names of twenty-three British Libraries in some of which the serials may be found; where the set is incomplete the symbol is followed by *i*. The information from which this list has been compiled was obtained, in the first instance, from published catalogues; subsequently the list was submitted to the custodians of many of the libraries, who kindly marked many serials which had not been found in the catalogues used. The thanks of the Committee for this valuable assistance are due to Mr F. Jenkinson of the Cambridge University Library, Mr E. W. B. Nicholson of the Bodleian Library, the Librarian of the Radcliffe Library, the Librarian of the Patent Office, Dr B. Daydon Jackson and Mr A. W. Kappel of the Linnean Society, Mr W. H. Wesley of the Royal Astronomical Society, Mr C. V. Crook of the Geological Museum, Mr F. W. Clifford of the Chemical Society, and Mr R. W. Chambers of University College, London; Mr R. Lloyd Praeger obtained the information from the five libraries in Dublin, and Dr Hugh Marshall, F.R.S., from two libraries in Edinburgh and two in Glasgow.

Although much care has been expended in making this list as accurate as possible, it is probable that some errors will still be found and the Director will be thankful to any one who will send corrections: portions of the list will be required for the subsequent volumes of the Index.

The subjects are arranged under the registration numbers adopted in the International Catalogue; a copy of Schedule A, Mathematics, is prefixed to the Index, with indication of the pages on which the titles for the



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different sections occur. It has occasionally been found convenient, in order to save repetition in printing, to group entries under a sub-heading which is not contained in the International Catalogue Schedule. Where this has been done the sub-heading is printed in italics. In some of these cases the words of the sub-heading are understood to exist before the entries following them, and consequently these entries commence with small letters. These minor classifications, being often made mechanically on the basis of the explicit mention of the sub-heading, are not to be taken as exhaustive; cognate entries may be found elsewhere under the same main heading. The unit of classification is thus the complete numbered heading.

The first portion of the present volume of the Index having been sent to press before the whole of the material had been sorted, some slips belonging to earlier sections were discovered during the arrangement of the later ones. These titles have been placed in an Appendix under their appropriate registration numbers.

The following referees have assisted at various times in the preparation of the Subject Index in Pure Mathematics:—the late Professor J. D. Everett, F.R.S., Mr R. J. Dallas, Miss Alice Everett, Mr R. Hargreaves, Miss W. M. Hudson, Mr H. Knapman, Miss E. Perrin and Mr G. Harold Wilson. The Committee is indebted to them for much valuable help.

The arrangement of the contents of this volume for the press has been made by Mr R. J. Dallas, M.A., of King's College, Cambridge. To him and to Miss Bremner and the members of the Catalogue Staff thanks are due for careful and conscientious work.

At the request of the other members of the Committee, Mr G. B. Mathews, F.R.S., examined the whole of the proof-sheets, and made suggestions for their improvement: he was also consulted from time to time about questions of arrangement, head lines and sub-headings.

When the time for going to press approached, the Committee learned with much satisfaction that the Syndics of the Cambridge University Press were willing to undertake the complete risk of printing and publishing, as regards both the Catalogue of Scientific Papers and the Subject Index. It will be the care of the Committee, and it is hoped of the Scientific world generally, to use their best endeavours that this public-spirited action shall not result in financial loss.

Finally the thanks of the Committee are due to the officials of the Cambridge Press for their unfailing courtesy in the discharge of a complex task.

*March 1908.*

## SUBJECT INDEX OF PURE MATHEMATICS

### LIST OF SERIAL PUBLICATIONS

WITH THE ABBREVIATIONS OF THEIR TITLES USED IN THE INDEX, AND  
LIBRARIES WHERE THE SERIALS CAN BE CONSULTED.

The date following the title of a serial indicates the year of its commencement; if a second date is given it marks the termination of the serial.

The letters following the dates indicate libraries where the serials are to be found: if the serial is incomplete, the symbol of the library is followed by *i*.

|            |   |             |   |
|------------|---|-------------|---|
| B.M.       | British Museum.                           | Glasg.P.S.  | Royal Philosophical Society of Glasgow. |
| Camb.P.S.  | Cambridge Philosophical Library.          | Glasg.U.    | Glasgow University.                     |
| Camb.U.    | Cambridge University Library.             | Linn.S.     | Linnean Society.                        |
| Chem.S.    | Chemical Society.                         | Math.S.     | Mathematical Society.                   |
| Dub.N.L.I. | National Library of Ireland, Dublin.      | N.H.M.      | Natural History Museum.                 |
| Dub.R.C.S. | Royal College of Science, Dublin.         | Oxon.B.     | Bodleian, Oxford.                       |
| Dub.R.D.S. | Royal Dublin Society.                     | Oxon.B.(R.) | Deposited in Radcliffe.                 |
| Dub.R.I.A. | Royal Irish Academy, Dublin.              | Oxon.R.     | Radcliffe, Oxford.                      |
| Dub.T.C.   | Trinity College, Dublin.                  | P.O.        | Patent Office, London.                  |
| Edinb.R.S. | Royal Society of Edinburgh.               | R.A.S.      | Royal Astronomical Society.             |
| Edinb.U.   | Edinburgh University.                     | R.S.        | Royal Society.                          |
| Geol.M.    | Geological Survey Museum, Jer-<br>myn St. | U.C.L.      | University College, London.             |

|                                   |  |
|-----------------------------------|--|
| <b>Abv. Mm. S. Ém.</b> .....      | Mémoires de la Société d'Émulation d'Abbeville. Abbeville.   |
| <b>Abv. S. Mm.</b> .....          | 1833— B.M.; Camb.U.i; Dub.T.C.; Edinb.R.S.i; Linn.S.i;<br>N.H.M.i; Oxon.B.i; R.S.i.  |
| <b>A. C.</b> .....                | Annales de Chimie, ou Recueil de Mémoires concernant la Chimie<br>et les Arts qui en dépendent. Paris.<br>1789— B.M.; Camb.U.; Chem.S.; Dub.R.D.S.i; Dub.T.C.i;<br>Edinb.R.S.; Edinb.U.; N.H.M.; Oxon.B.(R.); P.O.; R.S.;<br>U.C.L.                  |
| <b>Ac. Cæs. Leop. W. Acta</b> ... | Nova Acta physico-medica Academiæ Cæs. Leopoldino-Carolinæ<br>Naturæ Curiosorum. Erlangen, Bonn, Breslau.<br>1758— Camb.P.S.; Camb.U.; Chem.S.i; Dub.T.C.; Edinb.R.S.i;<br>Edinb.U.; Linn.S.i; Math.S.i; N.H.M.; Oxon.R.; R.A.S.i;<br>R.S.; U.C.L.i. |
| <b>Acireale Ac. At.</b> .....     | <i>See Ac. Mt. C. W. Acta and Cæs. Leop. Ac. W. Acta.</i><br>Atti e Rendiconti dell' Accademia di Scienze, Lettere e Arti dei<br>Zelanti e PP. dello Studio di Acireale.<br>1890— Camb.P.S.i; N.H.M.i; R.S.i.  |
| <b>A. Cond. Pon. Chauss.</b> ...  | Annales des Conducteurs des Ponts et Chaussées; recueil de<br>mémoires, etc., concernant le Service de Conducteurs des Ponts<br>et Chaussées. Paris.<br>1857— P.O.   |
| <b>A. Cons. Arts et Mét.</b> ...  | Annales du Conservatoire des Arts et Métiers. Paris.<br>1861— B.M.; Camb.U.; Glasg.P.S.i; Oxon.B.; P.O.; R.S.  |
| <b>Ac. Mt. C. W. Acta</b> .....   | <i>See Far. A. Cons.</i>   |
| <b>Acta Mth.</b> .....            | <i>See Ac. Cæs. Leop. W. Acta and Cæs. Leop. Ac. W. Acta.</i><br>Acta Mathematica. Stockholm.<br>1882— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.;<br>Edinb.U.; Glasg.U.; Math.S.; Oxon.R.; R.A.S.; R.S.; U.C.L.                                 |

## List of Serial Publications

- A. der Hydrog.** ..... Annalen der Hydrographie und Maritimen Meteorologie. Herausgegeben von der Deutschen Seewarte in Hamburg. Berlin. 1873— B.M.; P.O.i.
- A. di C.** ..... Annali di Chimica. Milano. 1845—1900. B.M.; Chem.S.i.; P.O.i.
- Aer. J.** ..... The Aeronautical Journal. London. 1897— B.M.; Camb.U.i.; P.O.; R.S.
- A. Gén. Civ.** ..... Annales du Génie Civil; Recueil de Mémoires sur les Mathématiques pures et appliquées; l'Astronomie, la Chimie, la Physique, etc. Paris. 1862—80. B.M.; Camb.U.; Dub.R.C.S.i.; P.O.
- A. Hydrog.** ..... Annales Hydrographiques. Recueil d'avis, instructions, documents, et mémoires relatifs à l'Hydrographie et à la Navigation. Paris. 1849— B.M.; Edinb.R.S.i.; Oxon.B.; R.A.S.i.; R.S.i.
- Aix Ac. Mm.** ..... { Mémoires de l'Académie des Sciences, Agriculture, Arts et Belles-lettres. Aix.
- Aix Mm.** ..... { 1819— B.M.; Dub.R.I.A.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Aix Mm. Ac.** ..... { Transactions of the Albany Institute. Albany.
- Alb. I. T.** ..... { 1830— B.M.; N.H.M.; R.S.
- Allelod. S. T.** ..... The Transactions of the Allelodidactic Society. London. 1848. R.S.
- Am. Ac. Mm.** ..... Memoirs of the American Academy of Arts and Sciences. Cambridge and Boston. 1785— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.; P.O.i.; R.A.S.; R.S.; U.C.L.i.
- Am. Ac. F.** ..... { See *East. Am. Ac. Mm.* and *East. Mm. Am. Ac.*  
Proceedings of the American Academy of Arts and Sciences. Boston. 1848— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Edinb.R.S.; Glasg.P.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Am. Ac. F.** ..... Proceedings of the American Association for the Advancement of Science. Washington, Salem. 1848— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.
- Am. C.** ..... The American Chemist, a monthly Journal of theoretical Chemistry. New York. 1871—77. Chem.S.i.; N.H.M.; P.O.
- Am. Eng. & Railroad J.** ..... American Engineer and Railroad Journal. New York. 1893—95. B.M.; P.O.
- Amiens Ac. Mm.** ..... { Mémoires de l'Académie des Sciences, Agriculture, Commerce, Belles-lettres, et Arts du département de la Somme. Amiens.
- Amiens Mm.** ..... { 1835— B.M.; Camb.U.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Amiens Mm. Ac.** ..... {
- Amiens Mm. Ac. Sc.** ..... {
- A. Mines** ..... Annales des Mines, ou Recueil des Mémoires sur l'exploitation des Mines, et sur les Sciences et les Arts qui s'y rapportent. Paris. 1817— B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.i.; Glasg.P.S.i.; N.H.M.; Oxon.B.(R.); P.O.; R.S.
- Am. I. T.** ..... [Reports and Transactions] of the American Institute of the City of New York. Albany. 1841— B.M.i.; P.O.i.; R.S.i.
- Am. J. Mth.** ..... American Journal of Mathematics. Baltimore. 1878— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.i.; Math.S.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- Am. J. Sc.** ..... The American Journal of Science and Arts; Silliman. New Haven. 1818— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.
- Am. Ph. S. F.** ..... { See *Silliman J.*  
Proceedings of the American Philosophical Society. Philadelphia. 1840— Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.; U.C.L.
- Am. Ph. S. T.** ..... Transactions of the American Philosophical Society. Philadelphia. 1771— B.M.i.; Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.i;

## List of Serial Publications

- Edinb.R.S.; Linn.S.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.i.; R.S.; U.C.L.i.
- Am. S. CE. T.** ..... Transactions of the American Society of Civil Engineers. New York. 1871— P.O.
- Amst. Ak. Jb.** ..... Jaarboek van de Koninklijke Akademie van Wetenschappen gevestigd te Amsterdam. Amsterdam. 1857— B.M.; Camb.P.S.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.; N.H.M.; R.A.S.i.; R.S.; U.C.L.i.  
See **Amst. Jb. and Amst. Jb. Ak.**
- Amst. Ak. F.** ..... Koninklijke Akademie van Wetenschappen te Amsterdam. Proceedings of the Section of Sciences. Amsterdam. 1899— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; Oxon.B.; R.A.S.; R.S.
- Amst. Ak. Vh.** ..... Verhandelingen der Koninklijke Akademie van Wetenschappen. Amsterdam. 1854— Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.; U.C.L.i.
- Amst. Ak. Vs.** ..... Verslagen der Zittingen van de Wis- en Natuurkundige Afdeling der Koninklijke Akademie van Wetenschappen. 1893, 1894. Verslagen van de Zittingen der Wis- en Natuurkundige Afdeling van de Koninklijke Akademie van Wetenschappen. 1895, 1896. Koninklijke Akademie van Wetenschappen te Amsterdam. Verslagen van de Gewone Vergaderingen der Wis- en Natuurkundige Afdeling. Amsterdam. 1897— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; N.H.M.; R.A.S.; R.S.
- Amst. Ak. Vs. M.** ..... Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen. Afdeling Natuurkunde. Amsterdam. 1853—92. B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.  
See **Amst. Vs. Ak.**
- Amst. Ak. Wet. F.** ..... Processen-Verbaal van de Gewone Vergaderingen der Koninklijke Akademie van Wetenschappen, Afdeling Natuurkunde. 1865—84. Dub.R.D.S.; Linn.S.i.; R.A.S.; R.S.
- Amst. Arch. Wisk. Gn.** ..... Archief uitgegeven door het Wiskundig Genootschap. Amsterdam. 1856— B.M.; R.S.i.; U.C.L.i.  
See **Arch. Wisk. Gn.**
- Amst. I.** ..... Het Instituut. Amsterdam. 1841—46. B.M.; Edinb.R.S.i.
- Amst. Jb.** ..... }  
**Amst. Jb. Ak.** ..... } See **Amst. Ak. Jb.**
- Amst. Mengelwerk** ..... Mengelwerk van uitgelezene en andere Wis- en Natuurkundige Verhandelingen; door het Genootschap der Mathematische Wetenschappen, etc. Amsterdam. 1796—1816. R.S.  
See **Mengelwerk Wisk. Vh.**
- Amst. N. Vh.** ..... Nieuwe Verhandelingen der eerste Klasse van het Koninklijk Nederlandsche Instituut van Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam. 1827—52. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Linn.S.; N.H.M.; R.S.
- Amst. N. Ws. Ntk. Vh.** ..... Nieuwe Wis- en Natuurkundige Verhandelingen van het Genootschap te Amsterdam. Amsterdam. 1844—54. B.M.; R.S.
- Amst. Ts. Ws. Nt. Wet.** ..... Tijdschrift voor de Wis- en Natuurkundige Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam. 1847—52. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Linn.S.; Oxon.B.; R.S.
- Amst. Vh.** ..... }  
**Amst. Vh. Ak.** ..... } Verhandelingen der Eerste Klasse van het Koninklijk Nederlandsche Instituut van Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam. 1812—25. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; N.H.M.; Oxon.B.; R.S.
- Amst. Vs. Ak.** ..... See **Amst. Ak. Vs. M.**
- A. Mt.** ..... Annali di Matematica pura ed applicata...; Tortolini. Roma, Milano. 1858— B.M.; Camb.U.i.; Dub.R.D.S.; Dub.T.C.; Edinb.U.; Glasg.U.i.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.  
See **Tortolini A.**



## List of Serial Publications

- A. Mth.** ..... *Annals of Mathematics.* University of Virginia. Charlottesville, Va. 1884— Camb.P.S.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Math.S.i.; Oxon.B.
- Amst. Mch. S. J.** ..... The [Quarterly] *Journal of the Amateur Mechanical Society.* London. 1872—79. B.M.; P.O.
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- Berl. Mm. Ac.**..... {
- Berl. Pol. Gs. B.**..... Bericht über die Verhältnisse und die Wirksamkeit der Polytech-  
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- Bordeaux Act. Ac. Sc.** ... See **Bordeaux Ac. Act.**
- Bordeaux Mem. S. Sc.** ... Mémoires de la Société des Sciences Physiques et Naturelles de Bordeaux. Bordeaux.
- Bordeaux Mem. S. Sc. Pa.** ... 1855— Camb.P.S.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.  
See **Bordeaux S. Sc. Mem.**
- Bordeaux Obs. A.** ..... Annales de l'Observatoire de Bordeaux. Paris, Bordeaux.
- 1885— Dub.R.D.S.; R.A.S.; R.S.
- Bordeaux S. Sc. Mem.** ... See **Bordeaux Mem. S. Sc.**
- Bordeaux S. Sc. FV.** ..... Procès-Verbaux des Séances de la Société des Sciences Physiques et Naturelles de Bordeaux. Paris, Bordeaux.
- 1894— Camb.P.S.; Dub.R.D.S.i.; Edinb.R.S.; Math.S.; N.H.M.; R.A.S.; R.S.
- Bost. Am. Ac. Mem.** ..... Memoirs of the American Academy of Arts and Sciences. Cambridge and Boston.
- 1785— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.i.  
See **Am. Ac. Mem. and Bost. Mem. Am. Ac.**
- Bost. J. Ph.** ..... The Boston Journal of Philosophy and the Arts; Webster, etc. Boston.
- 1824—26. B.M.
- Bost. Mem. Am. Ac.** ..... See **Am. Ac. Mem. and Bost. Am. Ac. Mem.**
- Braunsch. Vr. Wt. Jbr.** ..... Jahresbericht des Vereins für Naturwissenschaft zu Braunschweig. Braunschweig, Altenburg.
- 1879— Dub.R.I.A.i.; Edinb.R.S.; Linn.S.; N.H.M.; R.S.
- Brem. Ab.** ..... Abhandlungen herausgegeben vom Naturwissenschaftlichen Vereine zu Bremen. Bremen.
- 1868— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.S.
- Brescia At. Cm.** ..... Commentarij della Accademia di Scienze, Lettere, ed Arti dell' Ateneo di Brescia. Brescia.
- Brescia Cm.** ..... 1808— B.M.; Camb.U.; N.H.M.i.; Oxon.B.i.; R.S.i.

## List of Serial Publications

- Bresl. Sl. Ge. Jbr.** ..... Jahresbericht der Schlesischen Gesellschaft für vaterländische Cultur. Breslau.  
1850— Dub.R.D.S.i.; Dub.R.I.A.i.; N.H.M.; R.S.
- Brest S. Ac. Bll.** ..... Bulletin de la Société Académique de Brest. Brest.  
1858— B.M.; Camb.U.i.
- Brugnatelli G.** ..... Giornale di Fisica, Chimica, e Storia Naturale; Brugnatelli, etc.  
Pavia.  
1808—27. B.M.; Camb.U.; Dub.T.C.; N.H.M.i.; Oxon.B.; P.O.; R.S.
- Brünn Vh.** ..... Verhandlungen des Naturforschenden Vereins zu Brünn. Brünn.  
1863— Camb.U.i.; Dub.R.I.A.; Linn.S.; N.H.M.; R.S.
- Brux. Ac. Bll.** ..... Bulletins de l'Académie Royale des Sciences, etc., de Belgique. Bruxelles.  
1834— B.M.i.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.  
See **Brux. Bll. Ac.**
- Brux. Ac. Cent. Anniv.** ..... Centième Anniversaire de Fondation (1772—1872) de l'Académie Royale de Belgique. Bruxelles.  
1872. B.M.; Camb.U.; Edinb.R.S.; Glasg.P.S.; Linn.S.; N.H.M.; P.O.; R.A.S.; R.S.
- Brux. Ac. Mm.** ..... Mémoires de l'Académie Royale des Sciences, des Lettres et des  
**Brux. Ac. Sc. Mm.** ..... { Beaux-Arts de Belgique. Bruxelles.  
1820— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Edinb.U.; Linn.S.i.; N.H.M.; Oxon.B.(R.); P.O.i.; R.A.S.i.; R.S.  
See **Brux. Mm. Ac. Sc.**
- Brux. A. Tr. Pbl.** ..... Annales des Travaux Publics de Belgique. Bruxelles.  
1843— B.M.; P.O.
- Brux. A. Un.** ..... Annales des Universités de Belgique. Bruxelles.  
1842—59. Camb.U.; Oxon.B.; P.O.; R.S.i.
- Brux. Bll. Ac.** ..... See **Brux. Ac. Bll.**
- Brux. Mm. Ac. Sc.** ..... See **Brux. Ac. Sc. Mm.**
- Brux. Mm. Cour.** ..... Mémoires Couronnés et Mémoires des Savants Etrangers, publ. par  
**Brux. Mm. Cour. 4°** ..... { l'Acad. Roy. des Sciences, etc. de Belgique. 4to. Bruxelles.  
1818— B.M.i.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Edinb.U.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.i.; R.A.S.i.; R.S.
- Brux. Mm. Cour. 8°** ..... Mémoires Couronnés et autres Mémoires, publ. par l'Acad. Roy. des Sciences, etc. de Belgique. 8vo. Bruxelles.  
1840— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.i.; R.S.
- Brux. Obs. A. (ds.)** ..... Annales de l'Observatoire Royal de Belgique. Bruxelles.  
1834— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; Oxon.B.i.; R.A.S.; R.S.; U.C.L.i.
- Brux. S. As. Bll.** ..... Bulletin de la Société Belge d'Astronomie. Comptes Rendus des Séances mensuelles de la Société et Revue des Sciences d'Observation. Astronomie, Météorologie, Géodésie et Physique du Globe. Bruxelles.  
1896— R.A.S.
- Brux. S. Sc. A.** ..... Annales de la Société Scientifique de Bruxelles. Bruxelles.  
1877— B.M.; Dub.N.L.I.i.; Edinb.R.S.; N.H.M.
- Bucarest Ac. Rom. A.** ... Analele Academiei Romane. Bucuresci.  
1880— B.M.; Camb.U.i.; N.H.M.i.
- Bucarest S. Sc. Bl.** ..... Buletinul Societății de Științe Fizice (Fizica, Chimia și Mineralogia) din Bucuresci-România.  
[1892]—[1896].  
Buletinul Societății de Științe din Bucuresci-România. Bucuresci.  
(Bulletin de la Société des Sciences Bucarest-Roumanie.)  
[1897]— Glasg.P.S.; Glasg.U.; N.H.M.; R.S.i.; U.C.L.i.
- Cádiz Period. M. Cl.** ..... Periódico mensual de Ciencias matemáticas y físicas. Cádiz.  
1848. B.M.; R.S.
- Caen Ac. Mm.** ..... Mémoires de l'Académie des Sciences, Arts et Belles-Lettres de Caen. Caen.  
1811— B.M.i.; Camb.U.i.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Ces. Leop. Ac. W. Acta.** ..... Nova Acta physico-medica Academiae Ces. Leopoldino-Carolinae naturæ Curiosorum. Erlangen, Bonn, Breslau.

## List of Serial Publications

- 1758— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.i.;  
Edinb.U.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.  
*See Ac. Cæs. Leop. W. Acta.*
- Calif. Ac. F.** ..... Proceedings of the California Academy of Natural Sciences. San Francisco.
- 1854— B.M.i.; Camb.P.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.;  
Linn.S.i.; N.H.M.; P.O.i.; R.S.i.
- Camb. and Dubl. Meth. J.** ..... The Cambridge and Dublin Mathematical Journal; Thomson and  
Ferrers. Cambridge.  
1846—54. B.M.; Camb.P.S.i.; Camb.U.; Dub.T.C.i.; Edinb.R.S.;  
Edinb.U.; N.H.M.; Oxon.B.; R.S.; U.C.L.
- Camb. Mem. Anal. S.** ..... Memoirs of the Cambridge Analytical Society. Cambridge.  
1813. B.M.; Camb.U.; Edinb.R.S.; P.O.; R.A.S.; R.S.; U.C.L.
- Camb. (M.) Meth. M.** ..... The Mathematical Monthly; Runkle. Cambridge (Massachusetts).  
1859—61. B.M.; Camb.U.; Oxon.B.; P.O.; R.A.S.i.; R.S.; U.C.L.  
*See Camb. (U.S.) Meth. M.*
- Camb. Meth. J.** ..... The Cambridge Mathematical Journal. London.  
1839—45. B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.U.;  
Glasg.U.; Math.S.i.; Oxon.B.i.; R.S.; U.C.L.
- Camb. Ph. S. F.** ..... Proceedings of the Cambridge Philosophical Society. Cambridge.  
1866— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.;  
Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.;  
Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.i.; P.O.; R.A.S.i.;  
R.S.; U.C.L.
- Camb. Ph. S. T.** ..... Transactions of the Cambridge Philosophical Society. Cambridge.  
1822— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.i.;  
Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Linn.S.; Math.  
S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Camb. (U.S.) Meth. M.** ... *See Camb. (M.) Meth. M.*
- Card. Nat. S. T.** ..... Cardiff Naturalists' Society. Reports and Transactions. Cardiff.  
1868— B.M.i.; Camb.U.i.; Dub.R.D.S.; Geol.M.i.; Glasg.P.S.i.;  
Linn.S.; N.H.M.; Oxon.B.i.; R.S.i.
- Carl Zpm.** ..... Repertorium für physikalische Technik, für mathematische und  
astronomische Instrumentenkunde; Carl. München.  
1865—91. B.M.; Camb.U.i.; Dub.N.L.I.i.; Oxon.R.; P.O.; R.S.  
*See Exner Zpm.*
- Časopis** ..... Časopis pro Pěstování Matematiky a Fysiky. Prag.  
1872— B.M.
- Catania Ac. Gioen. At.** ... Atti dell' Accademia Gioenia di Scienze Naturali in Catania. Catania.  
1825— B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.;  
N.H.M.; Oxon.B.; R.S.
- Catania Ac. Gioen. Ill.** ..... Bulletino mensile della Accademia Gioenia di Scienze Naturali in  
Catania. Catania.  
1888— Dub.R.I.A.; N.H.M.; R.S.
- Catania At. Ac. Gioen.** ... *See Catania Ac. Gioen. At.*
- CE. I. P.** ..... Minutes of Proceedings of the Institution of Civil Engineers, con-  
taining Abstracts of the Papers and of the Discussions. London.  
1837— B.M.; Camb.P.S.; Camb.U.; Dub.R.C.S.; Dub.R.D.S.;  
Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.;  
Oxon.B.; Oxon.R.i.; P.O.; R.S.; U.C.L.  
*See I. CE. F.*
- Chambéry Mem. Ac. Sav.** ..... Mémoires de la Société Académique de Savoie. Chambéry.  
1825— Camb.U.; Dub.R.I.A.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.  
*See Sav. Ac. Mem. and Sav. Mem. Ac.*
- Charleston Med. J.** ..... Charleston Medical Journal and Review; Gaillard, de Saussure, etc.  
Charleston.  
1846—60. B.M.
- Chemnitz B.** ..... Bericht der Naturwiss. Gesellsch. zu Chemnitz. Chemnitz.  
1859— Edinb.R.S.i.; N.H.M.; R.S.i.
- Cherb. Mem. S. As.** ..... Mémoires de la Société Académique de Cherbourg. Cherbourg.  
1833— B.M.; Camb.U.i.; Edinb.R.S.i.; N.H.M.i.; Oxon.B.i.
- Cherb. Mem. S. Sc.** ..... Mémoires de la Société Impériale des Sciences Naturelles de Cher-  
bourg. Cherbourg.
- Cherb. S. Sc. Mem.** ..... }  
**Cherb. S. Sc. Nt. Mem.** ... } 1852— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.;  
Linn.S.; N.H.M.; R.A.S.i.; R.S.
- Chile A. Un.** ..... Anales de la Universidad de Chile. Santiago de Chile.  
1843— B.M.i.; Dub.T.C.; N.H.M.i.; Oxon.B.i.  
*See Santiago de Chile Un. A.*

## List of Serial Publications

- Chil. S. Sc. Act.** ..... Actes de la Société Scientifique du Chili (Sociedad científica de Chile). Santiago.  
1892— B.M.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.i.
- Christiania F.** ..... Forhandlinger i Videnskabs-Selskabet i Christiania. Christiania.  
1859— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; N.H.M.; Oxon.B.; R.S.; U.C.L.i.
- Christiania Skr. (Mth.-  
Nt. Kl.)** ..... Skrifter udgivne af Videnskabselskabet i Christiania. Mathe-  
matisk-Naturvidenskabelig Klasse. Christiania.  
1894— B.M.; Camb.P.S.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.; N.H.M.; Oxon.B.; R.S.; U.C.L.i.
- Ciel et Terre** ..... Ciel et Terre. Revue populaire d'Astronomie, de Météorologie et de  
Physique du Globe. Bruxelles.  
1881— B.M.; Edinb.R.S.i.; R.A.S.
- Civing.** ..... Der Civilingenieur: Zeitschrift für das Ingenieurwesen. Freiberg,  
Leipzig.  
1854— B.M.; Camb.U.i.; Dub.R.I.A.i.; P.O.
- C. W.** ..... The Chemical News and Journal of Physical Science. London.  
1860— Camb.P.S.; Camb.U.i.; Chem.S.; Dub.N.L.I.i.; Dub.R.D.S.i.;  
Dub.R.C.S.i.; Edinb.U.; Geol.M.; Glasg.P.S.; N.H.M.; Oxon.B.i.;  
Oxon.R.; P.O.; R.S.; U.C.L.i.
- Can. I. P.** ..... Proceedings of the Canadian Institute, Toronto. Toronto.  
1879—90; 1897— B.M.; Camb.P.S.i.; Dub.R.D.S.; Edinb.R.S.i.;  
Edinb.U.; Glasg.P.S.; Math.S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.i.;  
R.S.
- Can. I. T.** ..... Transactions of the Canadian Institute. Toronto.  
1889— B.M.; Camb.P.S.; Dub.R.D.S.; Edinb.R.S.; Edinb.U.;  
Glasg.P.S.; Linn.S.; Math.S.i.; N.H.M.; P.O.; R.A.S.; R.S.
- Can. J.** ..... The Canadian Journal of Industry, Science, and Art. Toronto.  
1853—78. B.M.i.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; P.O.;  
R.A.S.i.; R.S.
- Can. R. S. P. & T.** ..... Proceedings and Transactions of the Royal Society of Canada.  
Montreal.  
1883— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.i.; Dub.R.I.A.i.;  
Dub.T.C.i.; Edinb.R.S.; Geol.M.i.; Glasg.P.S.; Linn.S.; N.H.M.;  
Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Coimbra I.** ..... O Instituto, jornal científico e litterario; Forjaz. Coimbra.  
1853— B.M.
- Con. des Temps** ..... Connaissance des Temps, à l'usage des Astronomes et des Navigateurs.  
Paris.  
1679— B.M.i.; Camb.U.; Dub.T.C.; Oxon.B.; R.A.S.i.; R.S.
- Conn. As. T.** ..... Transactions of the Connecticut Academy of Arts and Sciences.  
New Haven.  
1866— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;  
Glasg.P.S.; Linn.S.; Math.S.i.; N.H.M.; Oxon.R.; P.O.; R.A.S.;  
R.S.
- Conn. Mem. Ac.** ..... Memoirs of the Connecticut Academy of Arts and Sciences. New Haven.  
1810—16. Linn.S.i.; N.H.M.i.; R.S.
- Cornwall Pol. S. Sp.** ..... Reports and Transactions of the Royal Polytechnic Society of  
**Cornwall Pol. S. T.** ..... Cornwall. Falmouth.  
1833— B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.i.; Glasg.P.S.i.;  
Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.i.; P.O.; R.S.; U.C.L.i.
- Cornwall R. I. J.** ..... Journal of the Royal Institution of Cornwall. Truro.  
1864— B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.; Glasg.P.S.i.;  
N.H.M.; Oxon.B.i.; P.O.; R.A.S.i.; R.S.i.; U.C.L.i.
- C. R.** ..... Comptes Rendus hebdomadaires des Séances de l'Académie des  
Sciences. Paris.  
1835— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.;  
Edinb.R.S.i.; Edinb.U.; Geol.M.i.; Glasg.P.S.i.; Linn.S.; N.H.M.;  
Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.; U.C.L.
- Crc. Ac. Sc. Bll.** ..... Bulletin International de l'Académie des Sciences de Cracovie.  
Cracovie.  
1889— B.M.; Camb.U.; Chem.S.; Dub.R.I.A.i.; Edinb.R.S.;  
Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.
- Crelle J.** ..... Journal für die reine und angewandte Mathematik; Crelle. Berlin.  
**Crelle J. Mth.** ..... 1826— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.;  
Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.



## List of Serial Publications

- C. S. J.** ..... The Quarterly Journal of the Chemical Society of London. London.  
1849— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.C.S.;  
Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.i.;  
Glasg.P.S.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.S.;  
U.C.L.
- Cuyper Ev. Un.** ..... Revue Universelle des Mines, de la Métallurgie, des Travaux Publics,  
des Sciences, et des Arts, appliqués à l'Industrie; de Cuyper.  
Paris et Liège.  
1857— B.M.; Camb.U.; Dub.R.I.A.i.; Glasg.P.S.i.; Glasg.U.i.;  
N.H.M.; P.O.  
*See Ev. Un. Mines.*
- Ostg. Opt.** ..... Central-Zeitung für Optik und Mechanik. Leipzig.  
1880— Edinb.U.i.; P.O.i.; R.S.i.
- D. Alpvr. Z.** ..... Zeitschrift des Deutschen [und des Oesterreichischen] Alpenvereins.  
München.  
1870— B.M.; Camb.U.; Oxon.B.
- Danzig N. Schr.** ..... Neueste Schriften der Naturforschenden Gesellschaft in Danzig.  
Danzig.  
1820—62. B.M.i.; Dub.R.I.A.i.; N.H.M.; Oxon.R.; R.S.
- Danzig Schr.** ..... Schriften der Naturforschenden Gesellschaft in Danzig. Danzig.  
1863— Camb.P.S.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.;  
Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.R.i.; R.S.
- Delft Éc. Pol. A.** ..... Annales de l'École Polytechnique de Delft. Leide.  
1885—97. Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.  
R.I.A.; Edinb.R.S.; Math.S.; R.A.S.; R.S.
- Des Moines Anal.** ..... The Analyst: a monthly Journal of Pure and Applied Mathematics.  
Des Moines, Iowa.  
1874—83. Camb.U.; Edinb.R.S.; R.S.
- Devon. As. T.** ..... Reports and Transactions of the Devonshire Association for the  
Advancement of Science, Literature, and Art. Plymouth and  
London.  
1862— Camb.U.i.; Geol.M.; Linn.S.; N.H.M.; Oxon.B.; Oxon.  
R.i.; P.O.; R.S.
- D. Ga. Ostas. Mt.** ..... Mittheilungen der Deutschen Gesellschaft für Natur- und Völkerkunde  
Ostasiens. Yokohama.  
1873— B.M.; Edinb.R.S.i.
- Dijon Ac. Mm.** ..... { Mémoires de l'Académie des Sciences, Arts, et Belles-lettres de  
Dijon. Dijon.
- Dijon Ac. Sc. Mm.** ..... { 1769— B.M.i.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.;  
Edinb.R.S.i.; N.H.M.; Oxon.B.i.; R.A.S.; R.S.i.
- Dijon Mm. Ac.** ..... { Séances publiques de l'Académie des Sciences, Arts, et Belles-lettres  
de Dijon. Dijon.
- Dijon Ac. Sé.** ..... { 1810—29. B.M.i.; N.H.M.
- Dijon Sé. Ac.** ..... {
- Dingler** ..... Polytechnisches Journal; Dingler. Stuttgart.  
1820— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.C.S.i.;  
Dub.R.D.S.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; P.O.;  
R.S.i.
- D. Mth. Vr. Jhr.** ..... Jahresbericht der deutschen Mathematiker-Vereinigung. Berlin,  
Leipzig.  
1890— Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Math.S.i.; Oxon.B.;  
R.S.
- D. Mf. B.** ..... Bericht über die Versammlung der Deutschen Naturforscher und  
Aerzte.  
1822—83. Irregular, *see* Tageblatt. Camb.U.i.; N.H.M.i.; Oxon.  
R.i.; R.S.i.  
*See D. Mf. Vam. B.*
- D. Mf. Tbl.** ..... Tageblatt der...Versammlung Deutscher Naturforscher und Aerzte.  
1836— Irregular, *see* Ber. and Verh. Camb.U.; N.H.M.; Oxon.  
R.i.
- D. Mf. Vh.** ..... Verhandlungen der Gesellschaft Deutscher Naturforscher und Aerzte.  
Leipzig.  
1890— Camb.U.; N.H.M.; Oxon.R.  
*See D. Mf. B.*
- Dn. Vd. Selsk. Skr.** ..... Det Kongelige Danske Videnskabernes Selskabs Skrifter. Kiöbenhavn.  
1801—18. B.M.; Camb.P.S.i.; Camb.U.; Edinb.R.S.; N.H.M.;  
Oxon.B.; R.S.  
*See Klöb. Dn. Vd. Selsk. Skr.*

## List of Serial Publications

- Dorpat Sh.** ..... Sitzungsberichte der Naturforscher-Gesellschaft zu Dorpat. Dorpat.  
1861— Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.; N.H.M.; R.S.i.
- Douai Mm. S. Ag.** ..... Mémoires de la Société d'Agriculture, de Sciences, et d'Arts, séant  
à Douai. Douai.  
1826— B.M.; Camb.U.i.; Oxon.B.i.; R.S.i.
- Doubs S. Mm.** ..... Mémoires et Comptes Rendus de la Société [Libre] d'Émulation  
du Doubs. Besançon.  
1841— B.M.; N.H.M.i.
- Dresden Isis Sh.** ..... { Sitzungsberichte der Naturwissenschaftlichen Gesellschaft Isis in  
Dresden. Dresden.  
1861— Camb.U.i.; Dub.T.C.; Geol.S.; N.H.M.
- Dresden Sb. Isis** ..... {
- Dubl. Ph. J.** ..... The Dublin Philosophical Journal and Scientific Review. Dublin.  
1825—26. B.M.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.i.; N.H.M.;  
Oxon.B.; Oxon.R.; R.S.i.
- Dubl. R. S. J.** ..... Journal of the Royal Dublin Society. Dublin.  
1856—75. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.;  
Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Geol.M.; Glasg.U.i.;  
Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.
- Dubl. S. Sc. F.** ..... The Scientific Proceedings of the Royal Dublin Society. Dublin.  
1877— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.  
R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Geol.M.; Glasg.  
P.S.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.;  
R.A.S.; R.S.; U.C.L.i.
- Dubl. S. Sc. T.** ..... The Scientific Transactions of the Royal Dublin Society. Dublin.  
1877— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.  
R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.;  
Glasg.P.S.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.;  
R.A.S.; R.S.; U.C.L.i.
- Dunkerque Mm. S. En-  
cour.** ..... Mémoires de la Société Dunkerquoise pour l'Encouragement des  
Sciences, des Lettres, et des Arts. Dunkerque.  
1863— B.M.; Oxon.B.; R.S.i.
- Edinb. J. Sc.** ..... The Edinburgh Journal of Science, exhibiting a view of the progress  
of discovery in Natural Philosophy, Chemistry, Mineralogy,  
Geology, Botany, etc.; David Brewster. Edinburgh.  
1824—1832. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Edinb.U.;  
Glasg.P.S.i.; Glasg.U.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.
- Edinb. Meth. S. F.** ..... Proceedings of the Edinburgh Mathematical Society. London and  
Edinburgh.  
1833— B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Edinb.U.;  
Glasg.U.; Math.S.; R.S.i.
- Edinb. N. Ph. J.** ..... The Edinburgh New Philosophical Journal, exhibiting a view of the  
progressive Improvements, etc. in the Sciences, etc.; Robert  
Jameson. Edinburgh.  
1826—64. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.i.;  
Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.;  
Oxon.R.; P.O.; R.A.S.i.; R.S.
- Edinb. Ph. J.** ..... The Edinburgh Philosophical Journal, exhibiting a view of the  
Progress of Discovery in Natural Philosophy, etc.; David Brewster  
and Robert Jameson. Edinburgh.  
1819—26. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.;  
Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.i.;  
Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Edinb. P. R. S.** ..... { Proceedings of the Royal Society of Edinburgh. Edinburgh.  
**Edinb. R. S. F.** ..... { 1845— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.;  
Edinb.R.S.; Edinb.U.; Geol.M.i.; Glasg.P.S.; Linn.S.; Math.S.i.;  
N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.i.
- Edinb. R. S. T.** ..... Transactions of the Royal Society of Edinburgh. Edinburgh.  
1788— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.  
R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Glasg.P.S.; Glasg.U.;  
Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.;  
R.S.; U.C.L.
- Edinb. T. R. S.** ..... See **Edinb. T. R. S.**
- Edinb. Sc. S. Arts T.** ..... Transactions of the Royal Scottish Society of Arts. Edinburgh.  
1841— B.M.i.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; Edinb.U.;  
Glasg.P.S.; Glasg.U.; P.O.; R.S.
- See **Edinb. T. Sc. S. Arts and S. Sc. Arts T.**

## List of Serial Publications

- Edinb. T. R. S.** ..... See **Edinb. T. R. S. T.**  
**Edinb. T. Sc. S. Arts** ..... See **Edinb. Sc. S. Arts T. and Sc. S. Arts T.**  
**Educ. Times** ..... The Educational Times, and Journal of the College of Preceptors. London.  
 1847— B.M.; Camb.P.S.i.; Camb.U.i.; Dub.N.L.I.; Math.S.i.; Oxon.B.i.; Oxon.R.i.; R.S.i.  
**Elect.** ..... The Electrician. London.  
 1862— B.M.i.; Camb.P.S.i.; Camb.U.i.; Dub.N.L.I.i.; Dub.R.C.S.i.; Edinb.R.S.i.; Edinb.U.i.; Glasg.P.S.i.; Glasg.U.i.; Oxon.B.i.; Oxon.R.i.; P.O.; R.S.i.; U.C.L.i.  
**Elekttech. Z.** ..... Elektrotechnische Zeitschrift. Berlin, München.  
 1880— B.M.; Glasg.U.; P.O.  
**Eng. S. T.** ..... Transactions of the Society of Engineers. London.  
 1860— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Glasg.P.S.i.; Oxon.B.; P.O.; R.S.i.  
**Ens. Mth.** ..... L'Enseignement Mathématique. Revue Internationale. Paris.  
 1899— Math.S.  
**Épinal (Vosg.) A.** ..... Annales de la Société d'Émulation du département des Vosges. Épinal.  
 1831— B.M.; R.S.i.  
**Erdm. J. Pr. C.** ..... Journal für praktische Chemie; Erdman, etc. Leipzig.  
 1834— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; U.C.L.i.  
**Erfurt Ak. Jb.** ..... Jahrbücher der königlichen Akademie gemeinnütziger Wissenschaften zu Erfurt. Erfurt.  
 1860— B.M.; N.H.M.  
**Erfurt N. Acta** ..... Nova Acta Academiæ Electoralis Moguntinæ Scientiarum utilium quæ Erfurti est. Erfurti.  
 1799—1809. B.M.i.; Camb.U.; N.H.M.; Oxon.B.i.; R.S.  
**Erlang. Ps. Md. S. Sb.** ... } Sitzungsberichte der Physikalisch-Medicinischen Societät zu Erlangen.  
**Erlang. Sb. Ps. Md. S.** ... }  
 1864— B.M.; Camb.P.S.; Dub.R.D.S.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; R.S.i.  
**Erman Arch. Ra.** ..... Archiv für wissenschaftliche Kunde von Russland; Erman. Berlin.  
 1841—67. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.i.  
**Eure J. d'Ag.** ..... Journal d'Agriculture, de Médecine et des Sciences accessoires. Evreux.  
 1824—29. B.M.; R.S.  
**Eure Rec. S. Ag.** ..... Recueil de la Société d'Agriculture, Sciences, Arts, et Belles-lettres du département de l'Eure. Evreux.  
 1830—39. B.M.; Camb.U.; Oxon.B.; R.S.  
**Eure Rec. Tr.** ..... Recueil des Travaux de la Société Libre d'Agriculture, des Sciences, des Arts et des Belles-Lettres du département de l'Eure. Evreux.  
 1841— B.M.; Camb.U.; R.S.  
**Eure S. Ag. Rec.** ..... See **Eure Rec. S. Ag.**  
**Évk.** ..... A'Magyar Tudós Társaság' Évkönyvei. Pest. Continued as: A'Magyar Tudományos Akademia Évkönyvei. Budá.  
 1833—39. B.M.; Edinb.R.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.; U.C.L.i.  
**Exner Rpm.** ..... Repertorium der Physik; Exner. München, Leipzig.  
 1865—91. B.M.; Camb.U.i.; Dub.N.L.I.i.; Edinb.U.; Oxon.R.; P.O.; R.S.  
 See **Carl Rpm.**  
**Férussac Bul. Sc. Mth.** ... Bulletin des Sciences Mathématiques, Astronomiques, Physiques, et Chimiques; Baron de Férussac. Paris.  
 1824—31. B.M.; Edinb.U.i.; Oxon.R.; P.O.; U.C.L.  
**Finist. S. Sc. Bul.** ..... Bulletin de la Société d'Études Scientifiques du Finistère. Morlaix.  
 1879— N.H.M.  
**Firenze Ac. Georg. At.** ... } Atti della R. Accademia economico-agraria dei Georgofili. Firenze.  
**Firenze At. Ac. Georg.** ... }  
**Firenze Opusc. Sc.** ..... Collezione d' Opuscoli scientifici, etc. Firenze.  
 1807—18. B.M.; N.H.M.  
**Förster Al. Baustg.** ..... Allgemeine Bauzeitung; Förster. Wien.  
 1836— B.M.; Camb.U.; P.O.  
**Franklin I. J.** ..... Journal of the Franklin Institute of the State of Pennsylvania. Philadelphia.  
 1828— B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Glasg.P.S.i.; Oxon.B.; P.O.; R.A.S.i.; R.S.; U.C.L.i.

## List of Serial Publications

- Fr. Cg. Md. Chir.** ..... Congrès Médico-Chirurgical de France. Paris.  
1863— B.M.
- Fr. Cg. Sc.** ..... Sessions des Congrès Scientifiques de France.  
1833—79. B.M.; Camb.U.; N.H.M.
- Freiburg B.** ..... Berichte über die Verhandlungen der Naturforschenden Gesellschaft zu Freiburg i. B. Freiburg i. B.  
1855— B.M.; Camb.U.i.; Dub.R.I.A.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.
- Fr. S. Ag. Mm.** ..... Mémoires d'Agriculture, d'Économie rurale et domestique publiés par la Société d'Agriculture. Paris.  
1801— B.M.; Edinb.R.S.i.; Oxon.B.
- Fr. S. Min. Sil.** ..... Bulletin de la Société Minéralogique de France. Menlan, Paris.  
1878— B.M.; Dub.T.C.; Geol.M.; N.H.M.; Oxon.R.; R.S.
- Fachr. Mth.** ..... Jahrbuch über die Fortschritte der Mathematik. Berlin.  
1868— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Math.S.; Oxon.R.; R.S.; U.C.L.
- Fachr. Ph.** ..... Die Fortschritte der Physik. Berlin.  
1845— Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Edinb.U.; Glasg.U.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; U.C.L.
- Gand. A. Ac.** ..... Annales Academiæ Gandavensis. Gandavi. (Ghent.)  
1819—31. B.M.; Camb.U.; N.H.M.; Oxon.B.
- G. Arcad.** ..... Giornale Arcadico di Scienze, etc. Roma.  
1819— B.M.; N.H.M.i.; Oxon.B.
- Gard Aperçu Tr.** ..... Notice [ou Aperçu analytique] des Travaux de l'Académie Royale du Gard. Nîmes.  
1807—? B.M.; Camb.U.; Oxon.B.  
*See Gard Not. Tr. Ac. and Gard Tr. Ac.*
- Gard Mm. Ac.** ..... Mémoires de l'Académie du Gard. Nîmes.  
1832— B.M.; Camb.U.; Oxon.B.; R.S.i.
- Gard Not. Tr. Ac.** }  
**Gard Tr. Ac.** } ..... *See Gard Aperçu Tr.*
- Gen. I. Nt. Mm.** ..... Mémoires de l'Institut National Gènevois. Genève.  
1854— B.M.; Camb.U.; Dub.R.D.S.; N.H.M.i.; Oxon.B.; R.S.
- Gen. Mm. S. Ph.** ..... Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. Genève.  
1821— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.  
*See Gen. S. Ph. Mm.*
- Genova Mm. Ac.** ..... Memorie dell' Accademia Imperiale delle Scienze di Genova. Genova.  
1809—14. Camb.U.i.; N.H.M.i.; R.S.
- Genova Mm. I. Ligure** ... Memorie dell' Istituto Ligure. Genova.  
1806. B.M.; Camb.U.; R.S.
- Genova Un. At.** ..... Atti della R. Università di Genova. Genova.  
1869— B.M.; Camb.U.; N.H.M.
- Gen. S. Ph. Mm.** ..... *See Gen. Mm. S. Ph.*
- Gergonne A. Mth.** ..... Annales de Mathématiques, pures et appliquées; Gergonne. Nîmes et Paris.  
1810—31. B.M.; Dub.T.C.; Edinb.U.i.; Glasg.U.; Oxon.B.(R.); R.A.S.i.; R.S.; U.C.L.
- Gg. S. J.** ..... Journal of the Royal Geographical Society of London. London.  
1832—80. B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.
- Gg. S. P.** ..... Proceedings of the Royal Geographical Society of London. London.  
1857—92. Camb.P.S.i.; Camb.U.; Dub.T.C.; Edinb.R.S.; Geol.M.; Glasg.P.S.i.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- Giamb. Vico** ..... Il Giambattista-Vico, giornale scientifico. Napoli.  
1857. N.H.M.; Oxon.B.i.  
*See Il Giamb. Vico.*
- Giessem Oberh. Ga. B.** ... Berichte der Oberhessischen Gesellschaft für Natur- und Heilkunde. Giessen.  
1847— B.M.i.; Camb.P.S.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; P.O.i.; R.S.i.

## List of Serial Publications

- Gilbert A.** ..... *Annalen der Physik*; Gilbert. Halle und Leipzig.  
1799—1824. Camb.U.; Chem.S.; Edinb.U.; N.H.M.; Oxon.B.(R.);  
P.O.; R.S.
- Gill Tech. Rep.** ..... *The Technical Repository*; Gill. London.  
1822—27. B.M.; Camb.U.; Edinb.R.S.i.; Oxon.B.; P.O.; R.S.i.
- Glasg. I. Eng. T.** ..... *Transactions of the Institution of Engineers [and Shipbuilders] in  
Scotland*. Glasgow.  
1857— Camb.U.i.; P.O.; U.C.L.i.  
{ *Proceedings of the Philosophical Society of Glasgow*. Glasgow.  
**Glasg. P. Ph. S.** ..... { 1841— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.;  
**Glasg. Ph. S. P.** ..... { Edinb.R.S.; Geol.M.i.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.;  
P.O.i.; R.A.S.; R.S.
- Gleanings Sc.** ..... *Gleanings in Science*. Calcutta.  
1829—31. B.M.; Edinb.R.S.i.; N.H.M.; U.C.L.i.
- Gl. Mg.** ..... *The Geological Magazine or Monthly Journal of Geology*. London.  
1864— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Geol.M.;  
Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.; U.C.L.
- Gl. S. QJ.** ..... *The Quarterly Journal of the Geological Society of London*. London.  
1845— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.;  
Geol.M.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.;  
R.A.S.; R.S.; U.C.L.
- G. Mt.** ..... *Giornale di Matematiche ad uso degli Studenti delle Università  
Italiane*; Battaglini. Napoli.  
1863— B.M.; Camb.U.; Dub.R.C.S.i.; Dub.R.I.A.i.; Math.S.i.;  
Oxon.B.; R.S.; U.C.L.i.
- Görl. Ab.** ..... *Abhandlungen der Naturforschenden Gesellschaft zu Görlitz*. Görlitz.  
1827— B.M.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; N.H.M.;  
R.S.
- Göteborg. Hndl.** ..... *Göteborgs Kongl. Vetenskaps och Vitterhets Samhälles Handlingar*.  
Göteborg.  
1850— B.M.; Camb.P.S.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.  
R.S.i.; N.H.M.; R.S.i.
- Gött. Ab.** ..... *Abhandlungen der k. Gesellschaft der Wissenschaften*. Göttingen.  
1843— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.;  
Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; U.C.L.i.
- Gött. Cm.** ..... *Commentationes Societatis Regiæ Scientiarum Göttingensis*. Got-  
tingæ.  
1778—1808. B.M.i.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.  
U.i.; N.H.M.; Oxon.B.; R.S.; U.C.L.  
*Commentationes recentiores Societatis, etc.* Göttingæ.  
1808—37. B.M.; Camb.U.; Edinb.R.S.i.; N.H.M.; Oxon.B.;  
Oxon.R.; R.A.S.i.; R.S.; U.C.L.
- Gött. Nr.** ..... *Nachrichten von der k. Gesellschaft der Wissenschaften und der  
Georg-Augusts-Universität zu Göttingen*. Göttingen.  
1845— B.M.; Camb.P.S.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.;  
Dub.T.C.i.; Edinb.R.S.; Glasg.U.; Linn.S.; Math.S.i.; N.H.M.;  
Oxon.B.; Oxon.R.; R.A.S.i.; R.S.
- Gött. Stud.** ..... *Göttinger Studien*; Krische. Göttingen.  
1845—47. N.H.M.; Oxon.B.i.; R.S.i.
- Gould Ac. J.** ..... *The Astronomical Journal*; Gould. Cambridge, Mass.  
1851—61. B.M.; Camb.U.; Glasg.U.i.; Oxon.B.; Oxon.R.i.;  
R.A.S.; R.S.  
*See An. J.*
- 's Gravenh. I. Ing. Ta.** ... *Tijdschrift van het Koninklijk Instituut van Ingenieurs*. 's Graven-  
hage.  
1869— B.M.
- Grenoble Ac. Delph. Bul.** ..... *Bulletin de l'Académie Delphinale, ou Société des Sciences et Arts  
de Grenoble*. Grenoble.  
1846— B.M.; Camb.U.i.; Oxon.B.; R.S.i.
- Groningen A. Ac.** ..... *Annales Academiæ Groninganiæ*. Groningæ.  
1815—37. B.M.i.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- Gruithuisen W. Analekt.** ..... *Neue Analekten für Erd- und Himmelskunde*. Gruithuisen.  
München.  
1832—36. B.M.; R.A.S.; R.S.
- Grunert Arch.** ..... *Archiv der Mathematik und Physik*; Grunert. Greifswald, Leipzig.  
1841— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Edinb.U.;  
Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.i.  
*See Arch. Math. Fa.*

## List of Serial Publications

- G. Teix. J. Sc.** ..... *Jornal de Sciencias Mathematicas e Astronomicas*, publicado pelo Dr Francisco Gomes Teixeira. Coimbra.  
1878— Math.S.; R.S.i.
- Haarl. Ma. Teyl. Arch.** ..... *Archives du Musée Teyler. Haarlem.*  
1866— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.;  
Glasg.P.S.; N.H.M.; Oxon.R.; R.A.S.; R.S.
- Haarl. Ntk. Vh. Mitsch.** ..... *Natuurkundige Verhandelingen van de [Bataafsche] Hollandsche Maatschappij der Wetenschappen te Haarlem. Haarlem.*  
1799— B.M.; Camb.U.i.; Dub.R.D.S.; N.H.M.; R.S.
- Haidinger Ab.** ..... *Naturwissenschaftliche Abhandlungen; Haidinger. Wien.*  
1847—51. Camb.U.; Chem.S.i.; Edinb.R.S.i.; Linn.S.; N.H.M.;  
R.A.S.i.; R.S.
- Haidinger B.** ..... *Berichte über die Mittheilungen von Freunden der Naturwissen-  
schaften in Wien; Haidinger. Wien.*  
1847—51. Camb.U.; Chem.S.i.; Edinb.R.S.; Linn.S.; N.H.M.;  
R.A.S.; R.S.
- Hain. Mm. S.** ..... } *Mémoires et Publications de la Société des Sciences, des Arts et des*  
**Hain. S. Mm.** ..... } *Lettres du Hainaut. Mons.*  
1839— B.M.; Dub.T.C.i.; N.H.M.; Oxon.B.i.; R.S.i.
- Hall Bij.** ..... *Bijdragen tot de Natuurkundige Wetenschappen; Hall, etc.*  
Amsterdam.  
1826—32. B.M.; Camb.U.; N.H.M.; R.S.
- Halle Ab. Nt. Vr.** ..... *Abhandlungen des Naturwissenschaftlichen Vereins für Sachsen und*  
*Thüringen in Halle; Giebel. Berlin.*  
1860— B.M.; Camb.U.; N.H.M.i.; R.S.i.
- Halle Nt. Ga. B.** ..... *Bericht der Naturforschenden Gesellschaft zu Halle. Halle.*  
1856— Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Oxon.R.i.; R.S.
- Halle Z.** ..... } *Zeitschrift für die gesammten Naturwissenschaften; herausgegeben*  
**Halle Z. Nw.** ..... } *von dem Naturwissenschaftlichen Vereine für Sachsen und*  
*Thüringen in Halle; Giebel. Berlin.*  
1853— B.M.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.;  
Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.S.
- See **Z. Nw.**
- Hamb. Mth. Ga. Mt.** ..... *Mittheilungen der Mathematischen Gesellschaft in Hamburg. Leipzig.*  
1899— Math.S.
- Hammerschmidt Al.** ..... *Allgemeine Oesterreichische Zeitschrift für den Landwirth, Forst-  
Oestr. Z. .... mann und Gärtner; Hammerschmidt. Wien.*
- Hann. Archt.-Vr. Z.** ..... } *Zeitschr. des Architekten- und Ingenieur-Vereins zu Hannover.*  
**Hann. Z. Archt.-Vr.** ..... } *Hannover.*  
1855— Camb.U.i.; P.O.
- Heidl. Nt. Md. Vh.** ..... } *Verhandlungen des Naturhistorisch-Medicinischen Vereins zu Heidel-  
Heidl. Vh. Nt. Md. ..... } *berg. Heidelberg.*  
1857— Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Linn.S.i.; N.H.M.i.;  
R.S.i.*
- Helsingf. Acta.** ..... *Acta Societatis Scientiarum Fennicæ. Helsingfors.*  
1842— B.M.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.;  
N.H.M.; Oxon.B.; R.A.S.; R.S.
- Helsingf. Bd.** ..... *Bidrag till Kännedomen af Finlands Natur och Folk, utgifna af*  
*Finska Vetenskaps-Societeten. Helsingfors.*  
1858— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.;  
N.H.M.; Oxon.B.; R.A.S.; R.S.
- Helsingf. Öfv.** ..... *Öfversigt af Finska Vetenskaps-Societeten's Förhandlingar. Hel-  
singingfors.*  
1853— B.M.; Camb.P.S.i.; Camb.U.i.; Dub.R.D.S.; Dub.R.I.A.;  
Edinb.R.S.i.; Glasg.U.i.; N.H.M.; Oxon.B.; R.A.S.; R.S.
- Hermstedt Ma.** ..... *Museum des Neuesten und Wissenswürdigsten aus dem Gebiete der*  
*Naturwissenschaft, der Künste, der Fabriken, der Manufakturen,*  
*der technischen Gewerbe, der Landwirthschaft, der Produkten-*  
*waaren und Handelskunde, und der bürgerlichen Haushaltung,*  
*etc.; Hermstedt. Berlin.*  
1814—18. B.M.; R.S.
- Hertha** ..... *Hertha, Zeitschrift für Erd-, Völker-, und Staaten-Kunde; Berghaus*  
*und Hoffmann. Stuttgart und Tübingen.*  
1825—29. B.M.; Camb.U.; Oxon.B.; R.S.; U.C.L.i.
- I. Act. J.** ..... *Journal of the Institute of Actuaries. London.*  
1869— B.M.; Camb.U.; Dub.N.L.I.i.; Oxon.B.; R.A.S.i.

## List of Serial Publications

- I. CE. P.** ..... Minutes of Proceedings of the Institution of Civil Engineers, containing Abstracts of the Papers and of the Discussions. London. 1837— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Oxon.B.; Oxon.R.i.; P.O.; R.S.; U.C.L.  
*See CE. I. F.*
- I. Egypt. Bil.** ..... Bulletin de l'Institut Egyptien. Caire. 1859— Camb.P.S.i.; Camb.U.i.; N.H.M.; U.C.L.i.
- I. Egypt. Mém.** ..... Mémoires ou Travaux Originaux présentés et lus à l'Institut Egyptien publiés sous les auspices de S. A. Mohammed Saïd, vice-roi d'Egypte, sous la direction de M. le Docteur B. Schnepf. Paris & Caire. 1862— Camb.P.S.i.; Camb.U.; N.H.M.  
**I. Elect. E. J.** ..... Journal of the Institution of Electrical Engineers. London. 1889— B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; Edinb.U.; Glasg.U.i.; Oxon.R.i.; P.O.; R.S.; U.C.L.
- II Cim.** ..... Il Cimento, rivista di Scienze, Lettere, ed Arti. Torino. 1852—55. B.M.
- II Giamb. Vico** ..... Il Giambattista-Vico, giornale scientifico. Napoli. 1857. N.H.M.; Oxon.B.i.  
*See Giamb. Vico.*
- II Politt.** ..... Il Politecnico; repertorio mensile di studj applicati alla prosperità e coltura sociale. Il Politecnico; repertorio di studj letterarj, scientifici e tecnici. Milano. 1839—44; 1860— B.M.; P.O.
- I. ME. P.** ..... Institution of Mechanical Engineers. Proceedings. Birmingham, London. 1847— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Glasg.U.; P.O.; R.S.; U.C.L.
- I. Min. Mtl. T.** ..... Transactions of the Institution of Mining and Metallurgy, London. London. 1892— B.M.; Camb.U.i.; Geol.S.; N.H.M.; P.O.
- II Progresso** ..... Il Progresso delle Scienze, Lettere, ed Arti. Napoli. First series undated; Second series 1832— Camb.U.; Oxon.B.
- Ing.** ..... Der Ingenieur; Zeitschrift für das gesammte Ingenieurwesen; Bornemann. Freiberg. 1848—50. B.M.; P.O.
- Inghirami Opusc.** ..... Nuova Collezione di Opuscoli e Notizie di Scienze; Inghirami. Fiesole. 1820—23. B.M.
- Innsb. Wt. Md. B.** ..... Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck. Innsbruck. 1870— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.
- Intell. Obs.** ..... The Intellectual Observer; a Review of Natural History, Microscopic Research, and Recreative Science. London. 1862—68. B.M.; Camb.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.A.S.; R.S.i.
- Iowa Ac. Sc. P.** ..... Proceedings of the Iowa Academy of Sciences. Des Moines. 1875— B.M.i.; Edinb.R.S.i.; N.H.M.; Oxon.B.i.; P.O.; R.S.i.; U.C.L.i.
- Ir. Ac. Cunningham Mém.** ..... Royal Irish Academy. "Cunningham Memoirs." Dublin. 1880— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; Linn.S.; N.H.M.i.; Oxon.B.; Oxon.R.; R.A.S.; R.S.i.; U.C.L.
- Ir. Ac. P.** ..... Proceedings of the Royal Irish Academy. (Science.) Dublin. 1841— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.i.
- Ir. Ac. T.** ..... Transactions of the Royal Irish Academy. Science. Dublin. 1787— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.
- I. Rev.** ..... India Review and Journal of Foreign Science and the Arts. Calcutta. 1837—38. B.M.; N.H.M.i.

## List of Serial Publications

- Isère S. Bul.** ..... Bulletin de la Société de Statistique, des Sciences Naturelles, et des Arts Industriels du département de l'Isère. Grenoble.  
1888— B.M.i.; N.H.M.; Oxon.B.; R.S.i.
- I. & S. I. J.** ..... The Journal of the Iron and Steel Institute. London.  
1872— Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.;  
Edinb.U.; Geol.M.i.; Glasg.P.S.i.; Glasg.U.i.; Oxon.B.; P.O.;  
R.S.; U.C.L.
- Jap. As. S. T.** ..... Transactions of the Asiatic Society of Japan. Yokohama.  
1872— B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; Oxon.R.;  
P.O.i.; R.S.
- Jb. Berg- Hw.** ..... Jahrbuch für das Berg- und Hüttenwesen im Königreiche Sachsen.  
Freiberg.  
1878— B.M.; N.H.M.i.; P.O.
- J. Bot.** ..... The Journal of Botany. London.  
1863— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.; Glasg.U.;  
Linn.S.; N.H.M.; P.O.i.
- J. de Ph.** ..... Journal de Physique, de Chimie, et de l'Histoire Naturelle;  
de Lamétherie etc. Paris.  
1794—1828. B.M.; Camb.U.; Glasg.U.i.; N.H.M.i.; Oxon.B.;  
Oxon.R.; R.S.; U.C.L.i.
- J. de Ph.** ..... Journal de Physique Théorique et Appliquée; D'Almeida. Paris.  
1872— Camb.U.; Dub.R.C.S.; Glasg.U.i.; Oxon.B.; P.O.; R.S.
- Jena. Sb.** ..... Sitzungsberichte der Jenaischen Gesellschaft für Medicin und  
Naturwissenschaft. Jena.  
1877—86. Edinb.R.S.i.; Linn.S.i.; Oxon.R.; R.S.
- Jena. Z.** ..... Jenaische Zeitschrift für Naturwissenschaft, herausg. von der  
Medicinisch-Naturwissenschaftlichen Gesellschaft zu Jena. Jena.  
1864— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.;  
Dub.R.D.S.i.; Edinb.R.S.; Edinb.U.i.; Glasg.U.i.; Linn.S.;  
N.H.M.; Oxon.B.; Oxon.R.; R.S.; U.C.L.
- J. Gén. Civ.** ..... Journal du Génie Civil des Sciences et des Arts. Paris.  
1828—48. B.M.i.; Camb.U.; P.O.
- J. H. Un. Cir.** ..... The Johns Hopkins University Circulars. Baltimore.  
1879— Camb.P.S.; Camb.U.; Dub.N.L.I.i.; Dub.R.I.A.i.;  
Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; Math.S.i.; N.H.M.;  
Oxon.B.; Oxon.R.; R.A.S.i.; R.S.; U.C.L.i.
- J. Micr. Sc.** ..... Quarterly Journal of Microscopical Science; Lankester and Busk.  
London.  
1858— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.;  
Dub.R.C.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.;  
N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; U.C.L.
- J. Mines** ..... Journal des Mines, ou Recueil de Mémoires sur l'exploitation des  
Mines, et sur les Sciences et les Arts qui s'y rapportent. Paris.  
1794—1815. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Linn.S.i.;  
N.H.M.; Oxon.B.(R.); R.S.i.
- J. Ph. C.** ..... The Journal of Physical Chemistry. Ithaca, N.Y.  
1896— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.;  
Edinb.U.; Glasg.U.; Oxon.R.; P.O.; R.S.i.
- J. Sav.** ..... Journal des Savants. Paris.  
1816— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.i.;  
Glasg.U.i.; Oxon.B.; Oxon.R.; P.O.i.; R.S.
- J. Tél.** ..... Journal Télégraphique publié par le Bureau International des  
Administrations Télégraphiques. Berne.  
1869— P.O.
- Kan. Ac. Sc. T.** ..... Transactions of the Kansas Academy of Science. Topeka, Kansas.  
1872— Camb.P.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.;  
Linn.S.i.; N.H.M.; Oxon.B.i.; R.S.i.
- Kan. Un. Q.** ..... The Kansas University Quarterly. Lawrence, Kansas.  
1893— B.M.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.  
P.S.i.; Math.S.; N.H.M.; R.S.
- Karlsruhe Wt. Vr. Vh.** ..... Verhandlungen des Naturwissenschaftlichen Vereins in Karlsruhe.  
Karlsruhe.  
1864— B.M.i.; Dub.R.I.A.; N.H.M.
- Karsten Arch.** ..... Archiv für Mineralogie, Geognosie, Bergbau, und Hüttenkunde;  
Karsten. Berlin.  
1829—55. B.M.; Edinb.R.S.i.; Geol.M.; N.H.M.; P.O.; R.S.



## List of Serial Publications

- Kastner Arch. Ntl.** ..... Archiv für die gesammte Naturlehre; Kastner. Nürnberg.  
1824—35. B.M.; N.H.M.; P.O.
- Kazan Mm. Un.** ..... Scientific Memoirs published by the Imperial University of Kazan.  
Kazan.  
1834— B.M.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.;  
Linn.S.i.; R.S.i.  
*See Kazan Un. Mm.*
- Kazan S. Mt. (Ps.-Mth.) P.** Proceedings of the Physico-Mathematical Section of the Naturalists' Society of the Imperial University of Kazan. Kazan.  
1883—90. R.S.
- Kazan S. Pa.-Mth. Bil.** ... Bulletin de la Société Physico-Mathématique de Kazan. Kazan.  
1891— Dub.R.I.A.i.; Edinb.R.S.i.; R.S.i.
- Kazan Un. Bil.** ..... Bulletin of the Imperial University of Kazan. Kazan.  
1865— B.M.i.; Camb.U.i.; Edinb.R.S.i.; Linn.S.i.  
*See Kazan Mm. Un.*
- Kazan Un. Mm.** ..... *See Kazan Mm. Un.*
- Kharkov Mth. S. Com.** ... Communications and Proceedings of the Mathematical Society of the Imperial University of Kharkov. Kharkov.  
1879?— R.S.i.
- Kiel Schr.** ..... Schriften der Universität zu Kiel. Kiel.  
1855—80. B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.i.;  
Oxon.B.; R.S.
- Klōb. Dn. Vd. Selsk. Afh.** { Det Kongelige Danske Videnskabernes Selskabs naturvidenskabelige  
og matematiske Afhandlinger. Kiøbenhavn.  
**Kjōb. Dn. Vd. Selsk. Afh.** { 1824—46. B.M.; Dub.T.C.; Edinb.R.S.; Linn.S.i.; N.H.M.; R.S.
- Klōb. Dn. Vd. Selsk. Skr.** { Det Kongelige Danske Videnskabernes Selskab Skriver. Kiøbenhavn.  
**Kjōb. Dn. Vd. Selsk. Skr.** { 1801—18. B.M.; Camb.P.S.i.; Camb.U.; Edinb.R.S.; N.H.M.;  
Oxon.B.; R.S.  
*See Dn. Vd. Selsk. Skr.*
- Kjōb. Dn. Vd. Selsk. Skr.** { Det Kongelige Danske Videnskabernes Selskabs Skrifter. Natur-  
videnskabelig og Mathematisk Afdeling. Kjōbenhavn.  
**Klōb. Skr.** { 1849— B.M.; Camb.U.i.; Edinb.R.S.; Linn.S.; N.H.M.; R.A.S.;  
**Kjōb. Skr.** { R.S.; U.C.L.i.
- Klōb. Ov.** ..... Oversigt over det Kongelige Danske Videnskabernes Selskabs For-  
handlinger. Kjøbenhavn.
- Kjōb. Ov.** ..... 1806— Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.i.; Dub.  
R.I.A.i.; Dub.T.C.i.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.i.;  
N.H.M.i.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- Kjōb. Ov.** ..... Königsberger Archiv für Naturwissenschaften und Mathematik;  
Bessell, etc. Königsberg.  
1812. B.M.; Camb.U.; Linn.S.
- Königsb. Arch.** ..... Schriften der königlichen Physikalisch-Oekonomischen Gesellschaft  
zu Königsberg. Königsberg.  
1860— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.;  
N.H.M.; P.O.i.; R.S.
- Königsb. Schr.** ..... Kosmos. Czasopismo polskiego Towarzystwa przyrodników imienia  
Kopernika. [Cosmos. The Journal of the Polish Society of  
Naturalists founded in honour of Copernicus.] Lwow.  
1876— B.M.; N.H.M.
- Kosmos (Lw.)** ..... Pamiętnik Akademii Umiejętności w Krakowie. Wydział Mate-  
matyczno-Przyrodniczy. [Memoirs of the Academy of Science  
in Cracow. Section of Mathematics and Natural Science.]  
Kraków.  
1874— B.M.; Edinb.R.S.i.; N.H.M.
- Krk. Ak. (Mt.-Prz.) Pam.** { Rozprawy... Wydziału Matematyczno-Przyrodniczego Akademii  
Umiejętności. [Proceedings of the Section of Mathematics and  
Natural Science of the Academy of Science.] Kraków.  
**Krk. Ak. (Mt.-Prz.) Rz.** { 1874— B.M.; Edinb.R.S.i.; N.H.M.
- Krk. Ak. (Mt.-Prz.) Rz.** { **& Sp.** ..... Rocznik Towarzystwa Naukowego z Uniwersytetem Krakowskim  
Połączonego. Krakowie. [Annals of the Scientific Society of the  
Polish University of Krakow. Krakow.]  
1817—72. B.M.
- Krk. Roczn. Tow. Nauk.** {
- Krk. Roczn. Uniwers.** {
- Lanc. Hist. S. T.** ..... Proceedings and Papers of the Lancashire and Cheshire Historic  
Society. Liverpool.  
**Lanc. T. Hist. S.** ..... 1849—54. Continued as: Transactions, etc., 1855— B.M.;  
Camb.U.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.P.S.i.; Oxon.B.i.;  
R.S.

## List of Serial Publications

- Laus. Bul. S. Vd.** ..... { Bulletin des Séances de la Société Vaudoise des Sciences Naturelles.  
Lausanne.
- Laus. S. Vd. Bul.** ..... { 1842— Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.;  
N.H.M.; Oxon.B.i.; R.S.
- Leic. S. T.** ..... The Transactions of the Leicester Literary and Philosophical Society.  
Leicester.  
1835— Camb.U.; Dub.R.D.S.; Geol.S.; Glasg.P.S.; Linn.S.i.;  
N.H.M.i.; Oxon.B.; P.O.; U.C.L.
- Lejd. A. Ac.** ..... Annales Academiæ Lugduno-Batavæ. Leiden.  
1815—75. B.M.; Camb.U.; Dub.T.C.i.; N.H.M.; Oxon.B.; R.S.i.;  
U.C.L.i.
- Leip. Ab. Jablon. Gs.** ..... Abhandlungen bei Begründung der k. Sächsischen Gesellschaft der  
Wissenschaften am Tage der zweihundertjährigen Geburtsfeier  
Leibnizens; herausg. v. d. Jablonowski'schen Gesellschaft zu  
Leipzig. Leipzig.  
1846. Camb.U.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; R.A.S.; R.S.
- Leip. Ab. Mth. Pa.** ..... Abhandlungen der Mathematisch-Physischen Classe der Königlich  
Sächsischen Gesellschaft der Wissenschaften. Leipzig.  
1852— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;  
Glasg.U.; Math.S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.;  
U.C.L.i.
- Leip. As. Gs. Vjschr.** ..... See **Leip. Mth. Pa. Ab.**  
Vierteljahrschrift der Astronomischen Gesellschaft. Leipzig.  
1866— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;  
Oxon.R.; R.A.S.; R.S.
- Leip. B.** ..... Berichte über die Verhandlungen (Math.-Phys. Classe) der König-  
lich Sächsischen Gesellschaft der Wissenschaften zu Leipzig.  
Leipzig.  
1846— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;  
Glasg.U.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.;  
U.C.L.i.
- Leip. Jablon. Preisschr.** ..... See **Leip. Mth. Pa. B.**  
Preisschriften gekrönt und herausgegeben von der Fürstlich Jab-  
lonowski'schen Gesellschaft zu Leipzig. Leipzig.  
1847— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.;  
Oxon.B.; R.A.S.i.; R.S.i.; U.C.L.i.
- Leip. Mth. Pa. Ab.** ..... See **Leip. Ab. Mth. Pa.**
- Leip. Mth. Pa. B.** ..... See **Leip. B.**
- Le Mans S. R. Tr.** ..... Analyse des Travaux de la Société [Royale] des Arts du Mans.  
Le Mans.  
1820. N.H.M.; R.S.
- Les Mondes** ..... Les Mondes, Revue hebdomadaire des Sciences et de leurs Appli-  
cations aux Arts, et à l'Industrie; l'Abbé F. Moigno. Paris.  
1863— B.M.; Camb.U.i.; Dub.N.L.I.i.; Glasg.P.S.i.; Oxon.R.;  
P.O.; R.S.i.
- L'I.** ..... L'Institut; Journal des Académies et Sociétés Scientifiques de la  
France et de l'Etranger. Paris.  
1833— B.M.i.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Glasg.P.S.i.;  
N.H.M.; Oxon.B.(R.); P.O.i.; R.S.i.
- Liège A. Ac.** ..... Annales Academiæ Leodiensis. Liège.  
1817—27. B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.
- Liège Mm. S. Sc.** ..... { Mémoires de la Société [Royale] des Sciences, de l'Agriculture, et  
des Arts à Liège. Liège.
- Liège S. Sc. Mm.** ..... { 1843— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Glasg.P.S.i.;  
Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.; R.S.
- Lille Mm.** ..... { Mémoires de la Société [Royale] des Sciences, etc. à Lille. Lille.
- Lille Mm. S.** ..... { 1827— B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; Oxon.R.;  
R.S.i.
- Lille S. Mm.** ..... {
- Lille Tr.** ..... Recueil des Travaux de la Société d'Amateurs des Sciences, de  
l'Agriculture, et des Arts à Lille. Lille.  
1819—27. B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; Oxon.R.;  
R.S.
- Lille Tr. Mm.** ..... Travaux et Mémoires de l'Université de Lille. Lille.  
1869— Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; N.H.M.;  
R.S.
- Lindemann Z.** ..... Zeitschrift für Astronomie und verwandte Wissenschaften; Lindenau.  
Tübingen.  
1816—18. B.M.; Camb.U.; R.A.S.; R.S.

## List of Serial Publications

- Louv. J.** ..... { Journal de Mathématiques pures et appliquées, fondé par Joseph Liouville. Paris.
- Louv. J. Mth.** ..... { 1836— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.
- Lisb. A.** ..... { *Annaes das Sciencias e Lettras*, publicados debaixo dos auspicios da Academia Real das Sciencias:—Sciencias mathematicas, physicas, historico-naturaes, e medicas. Lisboa.
- 1857— B.M.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.A.S.i.; R.S.i.  
See **A. So.**
- Lisb. Ac. Sc. Mm.** ..... { *Historia e Memorias da Academia Real das Sciencias de Lisboa*. Lisboa.
- 1797— B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.i.  
See **Lisb. Mm.**, **Lisb. Mm. Ac. Sc.** and **Lisb. Mm. So.**
- Lisb. J. Sc. Mth.** ..... { *Jornal de Sciencias mathematicas, physicas e naturaes*. Publicado sob os auspicios da Academia R. das Sciencias de Lisboa. Lisboa.
- 1868— B.M.; Camb.U.; Dub.R.D.S.i.; Edinb.R.S.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.; R.S.; U.C.L.i.
- Lisb. Mm.** ..... {
- Lisb. Mm. Ac. Sc.** ..... { See **Lisb. Ac. Sc. Mm.**
- Lisb. Mm. So.** ..... }
- L. Mth. S. P.** ..... { *Proceedings of the London Mathematical Society*. London.
- 1865— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.; Oxon.B.i.; Oxon.R.; R.S.; U.C.L.
- Landw. V.-St.** ..... { *Die landwirthschaftlichen Versuchs-Stationen*. Organ für wissenschaftliche Forschungen auf dem Gebiete der Landwirthschaft. Dresden, Chemnitz.
- 1859— B.M.i.; Camb.U.; Chem.S.i.; Oxon.B.; P.O.i.; R.S.i.
- Lotos** ..... { *Lotos*. Zeitschrift für Naturwissenschaften. Prag.
- 1851—95. B.M.; Camb.U.; Dub.R.I.A.i.; N.H.M.
- Louvain A. Ac.** ..... { *Annales Academiæ Lovaniensis*. Bruxelles, Louvain.
- 1821—27. B.M.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- Lpldina** ..... { *Leopoldina*: amtliches Organ der Kaiserlichen Leopoldino-Carolinischen Deutschen Akademie der Naturforscher. Dresden.
- 1859— B.M.; Camb.P.S.; Camb.U.i.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.A.S.i.; R.S.
- Lpool Lt. Ph. S. P.** ..... { *Proceedings of the Literary and Philosophical Society of Liverpool*. London, Liverpool.
- 1844— B.M.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.i.; P.O.i.; R.A.S.i.; R.S.; U.C.L.i.
- L. Ph. S. P.** ..... { *Proceedings of the Physical Society of London*. London.
- 1874— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Glasg.P.S.i.; Glasg.U.i.; Math.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Lucca At. Ac.** ..... { *Atti della R. Accademia Lucchese di Scienze, Lettere, ed Arti*. Lucca.
- 1821— B.M.; Camb.U.; Dub.T.C.i.; Oxon.B.i.
- Lum. Elect.** ..... { *La Lumière Électrique*. Journal universel d'Électricité. Paris.
- 1879—94. B.M.; Glasg.U.i.; P.O.
- Lund. Acta Un.** ..... { *Acta Universitatis Lundensis*. Lunds Universitets Årskrift. Afdelningen för Matematik och Naturvetenskap. Lund.
- 1864— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.  
See **Lund. Un. Acta**.
- Lund Phys. Sällsk. Tsk.** ..... { *Physiografiska Sällskapets Tidskrift*. Lund.
- 1837—38. Camb.U.; N.H.M.; R.S.  
See **Lund. Acta Un.**
- Lund. Un. Acta** ..... {
- Lux. I. R. Fb.** ..... { *Publications de l'Institut Royal Grand-Ducal de Luxembourg*. Section des Sciences Naturelles et Mathématiques: ci-devant "Société des Sciences Naturelles." Luxembourg.
- 1870— Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.S.i.
- Lux. S. Sc. Mm.** ..... { *Société des Sciences Naturelles du Grand-Duché de Luxembourg*. Luxembourg.
- Lux. S. Sc. Mt.** ..... { 1853—69. Dub.R.I.A.; R.S.
- Lyon Ac. Mm. (Sc.)** ..... { *Mémoires de l'Académie des Sciences, Belles-Lettres et Arts de Lyon*. Classe des Sciences. Lyon, Paris.
- Lyon Ac. Sc. Mm.** ..... }

## List of Serial Publications

- 1845— B.M.; Camb.U.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.i.  
*See Lyon Mm. Ac. and Lyon Mm. Ac. So.*
- Lyon A. S. Ag.** ..... Annales des Sciences physiques et naturelles, d'Agriculture, et d'Industrie, publiées par la Société d'Agriculture, etc.  
 Annales de la Société d'Agriculture, Histoire Naturelle et Arts Utiles de Lyon. Lyon.  
 1838— B.M.; Camb.U.; Dub.R.I.A.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.S.  
*See Lyon S. A. Ag. and Lyon S. Ag. A.*
- Lyon Mm. As.** ..... }  
**Lyon Mm. Ac. So.** ..... } *See Lyon Ac. Mm. (So.) and Lyon Ac. So. Mm.*  
**Lyon S. A. Ag.** ..... }  
**Lyon S. Ag. A.** ..... } *See Lyon A. S. Ag.*  
**Lyon Un. A.** ..... Annales de l'Université de Lyon. Paris, Lyon.  
 1891— B.M.; Edinb.R.S.; N.H.M.i.; R.S.i.
- Maclurian Lyceum Ct.**... Contributions of the Maclurian Lyceum to the Arts and Sciences. Philadelphia.  
 1827—29. B.M.; Linn.S.i.; N.H.M.
- Mâcon Ac. A.** ..... Annales de l'Académie de Mâcon, Société des Arts, Sciences, Belles-Lettres et d'Agriculture. Mâcon.  
 1851— B.M. R.S.i.
- Mâcon S. C. R.** ..... Compte Rendu des Travaux de la Société (d'Agriculture,) des Sciences, Arts et Belles-Lettres, de Mâcon. Mâcon.  
 1807—52. B.M.i.; R.S.i.
- Madras Eng. Rp.** ..... Reports, etc. on various professional subjects connected with the duties of the Corps of Engineers of the Madras Presidency; Capt. J. T. Smith, F.R.S. Madras.  
 1839—46. P.O.; R.S.
- Madras J.**..... The Madras Journal of Literature and Science. Madras.  
 1833— B.M.i.; Camb.U.; Dub.N.L.I.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; P.O.; R.A.S.i.; R.S.i.; U.C.L.i.
- Madrid Ac. Cl. Mm.** ..... {  
**Madrid Mm.** ..... { *Memorias de la Real Academia de Ciencias. Madrid.*  
 1850— B.M.; Camb.U.i.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.i.; U.C.L.i.  
**Madrid Rv.** ..... { *Revista de los Progresos de las Ciencias exactas, físicas, y naturales. Madrid.*  
 1850—86. B.M.; Dub.R.D.S.i.; Edinb.R.S.i.; N.H.M.; Oxon.R.i.; R.A.S.i.; R.S.i.
- Mag. Ak. Éta.** ..... Magyarakadémiai Értesítő. [Report of the Hungarian Academy.] Pest.  
 1840—59. B.M.
- Mag. Ak. Éta. (Mth. Term.)** Magyar akadémiai Értesítő. A matematikai és természettudományi osztályok közlönye. [Report of the Hungarian Academy. Communications of the Mathematical and Natural Science sections.] Pest.  
 1860—65. B.M.; Camb.P.S.i.; R.S.
- Magdeb. Nt. Vr. Jbr. u. Ab.** ..... Jahresbericht und Abhandlungen des Naturwissenschaftlichen Vereins zu Magdeburg. Magdeburg.  
 1869— B.M.; R.S.i.
- Mag. Tud. Ak. Étk. (Mth.)** Értekezések a Matematikai Osztály köréből. Kiadja a Magyar Tudományos Akadémia. [Memoirs on Mathematical subjects. Published by the Hungarian Academy of Science.] Pest.  
 1867—94. B.M.; Edinb.R.S.i.; R.S.
- Mag. Tud. Ak. Éta.** ..... A Magyar Tudományos Akadémia Értesítője. [Report of the Hungarian Academy of Science.] Pest.  
 1867— B.M.
- Majocchi A. Fis. C.** ..... Annali di Fisica, Chimica, e Matematiche, col Bulletino dell' Industria meccanica e chimica; Majocchi. Milano.  
 1841—60. B.M.; R.S.
- Manch. Lt. Ph. S. Mm.**... Memoirs of the Literary and Philosophical Society of Manchester. London and Manchester.  
 1785—1887. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Glasg.P.S.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.i.  
*See Manch. Mm. Ph. S., Manch. Ph. S. Mm. and Manch. S. Mm.*
- Manch. Lt. Ph. S. Mm. & P.** ..... Memoirs and Proceedings of the Manchester Literary and Philosophical Society. Manchester.

## List of Serial Publications

- 1888— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.i.;  
Edinb.R.S.; Glasg.P.S.; Linn.S.; Math.S.; N.H.M.; Oxon.B.;  
Oxon R.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Manch. Lt. Ph. S. P.** ..... Proceedings of the Literary and Philosophical Society of Manchester.  
Manchester.
- 1857—87. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.;  
Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Linn.S.; Math.  
S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; U.C.L.i.
- See **Manch. Ph. S. P.**
- Manch. Mem. Ph. S.** ..... }  
**Manch. Ph. S. Mem.** ..... } See **Manch. Lt. Ph. S. Mem.**
- Manch. Ph. S. P.** ..... See **Manch. Lt. Ph. S. P.**
- Manch. S. Mem.** ..... See **Manch. Lt. Ph. S. Mem.**
- Manch. S. P.** ..... See **Manch. Lt. Ph. S. P.**
- Marb. Schr.** ..... Schriften der Gesellschaft zur Beförderung der gesammten Natur-  
wissenschaften zu Marburg. Marburg.
- 1823— B.M.i.; Camb.U.; N.H.M.; Oxon.R.; R.S.
- Mars. Fac. Sc. A.** ..... Annales de la Faculté des Sciences de Marseille. Marseille,  
Paris.
- 1891— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.;  
Linn.S.; Math.S.i.; N.H.M.; R.A.S.; R.S.
- Mathematician** ..... The Mathematician; Davies, etc. London.
- 1845—50. B.M.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- Mathesis** ..... Mathesis. Recueil Mathématique.... Gand, Paris.
- 1881— B.M.; Camb.U.
- Mbl. Nt.** ..... Maanblad voor Natuurwetenschappen, uitgegeven door de Sectie voor  
Natuurwetenschappen van het Genootschap ter Bevordering van  
Natuur-, Genees- en Heelkunde. Amsterdam.
- 1871— N.H.M.
- Medley I. Eng.** ..... Professional Papers on Indian Engineering; Major J. G. Medley.  
Roorkee.
- 1864—68. P.O.i.; R.S.
- Mengelwerk Wisk. Vh.** Mengelwerk van uitgelezene en andere Wis- en Natuurkundige Ver-  
handelingen; door het Genootschap der Mathematische Weten-  
schappen, etc. Amsterdam.
- 1796—1816. R.S.
- See **Amst. Mengelwerk.**
- Mess. Mth.** ..... The Messenger of Mathematics. Cambridge, London.
- 1862— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.i.;  
Dub.R.D.S.i.; Edinb.R.S.i.; Edinb.U.; Glasg.U.; Math.S.i.;  
Oxon.B.; Oxon.R.; R.S.; U.C.L.
- M.-et-L. Mem. S. Ac.** ..... Mémoires de la Société Académique de Maine et Loire. Angers.
- 1857— B.M.; Camb.U.; N.H.M.; R.S.i.
- Met. S. QJ.** ..... Quarterly Journal of the Royal Meteorological Society. London.
- 1878— Camb.U.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Linn.  
S.i.; Oxon.R.; P.O.; R.A.S.; R.S.
- Met. Z.** ..... Meteorologische Zeitschrift. Berlin.
- 1884— Camb.U.; Edinb.R.S.; P.O.; R.S.
- Metz Ac. Mem.** ..... Mémoires de l'Académie (Royale, Impériale) de Metz. Metz.
- Metz Mem. Ac.** ..... }  
1821— B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.
- Mex. Arch. Com. Sc.** ..... Archives de la Commission Scientifique du Mexique, publiées sous  
les auspices du Ministère de l'Instruction Publique. Paris.
- 1865—69. Oxon.B.; R.S.
- Méz. Reg. Trim.** ..... Registro trimestre, ó Colección de Memorias de Historia, Literatura,  
Ciencias, etc., por una Sociedad de Literatos. México.
- 1832—33.
- Méz. S. "Alzate" Mem.** ..... Memorias de la Sociedad Científica "Antonio Alzate." México.
- 1887— B.M.i.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; Linn.S.i.;  
Math.S.i.; N.H.M.i.; R.A.S.; R.S.; U.C.L.i.
- Mg. Ntvd.** ..... Magazin for Naturvidenskaberne; Lundh, etc. Christiania.
- 1823—36. B.M.; N.H.M.i.; R.S.
- Mh. Mth. Pa.** ..... Monatshefte für Mathematik und Physik. Wien.
- 1890— B.M.; Camb.U.; Edinb.U.; Math.S.i.; N.H.M.
- Midl. Ntlist.** ..... The Midland Naturalist. London, Birmingham.
- 1878—93. Camb.U.; Geol.M.; Linn.S.; P.O.
- Mil. At. I. Lomb.** ..... Atti dell' I. R. Istituto Lombardo di Scienze, Lettere, ed Arti.  
Milano.
- 1858—64. B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; R.S.

## List of Serial Publications

- Mil. Effem.** ..... { *Effemeridi Astronomiche di Milano. Con Appendice di Osservazioni e Memorie Astronomiche. Milano.*
- Mil. Effem. As.** ..... { 1806— Camb.U.; Oxon.B.; R.A.S.i.
- Mil. Ephem. Ac.** ..... { *Ephemerides Astronomicæ, ad Meridianum Mediolanensem supputatæ ab Angelo de Cesaris. Accedit Appendix cum Observationibus et Opusculis. Mediolani. (Milan.)*
- 1774—1805. Oxon.B.
- Mil. G. I. Lomb.** ..... { *Giornale dell' I. R. Istituto Lombardo di Scienze, Lettere, ed Arti, e Biblioteca Italiana; compilata da varj dotti nazionali e stranieri. Milano.*
- 1841—56. B.M.; N.H.M.; Oxon.B.; R.S.
- See **Mil. I. Lomb. G.**
- Mil. G. S. Inc.** ..... { *Giornale della Società d' Incoraggiamento delle Scienze, etc. stabilità in Milano. Milano.*
- 1808—65. B.M.; Camb.U.
- See **Mil. G. I. Lomb.**
- Mil. I. Lomb. G.** ..... { *Memorie dell' I. R. Istituto Lombardo di Scienze, etc. Milano.*
- Mil. I. Lomb. Mem.** ..... { 1848— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.;
- Edinb.R.S.i.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.; U.C.L.i.
- See **Mil. Mem. I. Lomb.**
- Mil. I. Lomb. Ed.** ..... { *Reale Istituto Lombardo di Scienze e Lettere. Rendiconti. Milano.*
- 1864— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.
- See **Mil. I. Lomb. Mem.**
- Mil. Mem. I. Lomb.** ..... { *Memorie dell' I. R. Istituto del regno Lombardo-Veneto. Milano.*
- Mil. Mem. I. Lomb. Ven.** ..... { 1819—38. B.M.; Camb.U.; N.H.M.; Oxon.B.i.; R.S.
- Mitau Arb. Kurländ. Gs.** ..... { *Arbeiten der Kurländischen Gesellschaft für Literatur und Kunst. Mitau.*
- 1847—51. B.M.; Camb.U.
- Mitau Quatember.** ..... { *Die Quatember; Zeitschrift für naturwissenschaftl., geschichtl., philolog. und gemischte Gegenstände; von Trautvetter. Mitau.*
- 1829—30. B.M.
- Mitau Send. Kurländ. Gs.** ..... { *Sendungen der Kurländischen Gesellschaft für Literatur und Kunst. Mitau.*
- 1840—47. B.M.
- Mn. Mg.** ..... { *The Mineralogical Magazine and Journal of the Mineralogical Society of Great Britain and Ireland. Truro, London.*
- 1876— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Geol.M.; N.H.M.; Oxon.B.(R.); P.O.; R.S.
- Mntp. Ac. Mem.** ..... { *Académie des Sciences et Lettres de Montpellier. Mémoires de la Section des Sciences. Montpellier.*
- 1847— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; R.A.S.; R.S.; U.C.L.i.
- See **Mntp. Ac. Sc. Mem., Mntp. Mem. Ac. and Mntp. Mem. Ac. Sect. Sc.**
- Mntp. Ac. PV.** ..... { *Extraits des Procès-Verbaux des Séances de l'Académie des Sciences et Lettres, établie à Montpellier. Montpellier.*
- 1847—54. N.H.M.i.
- Mntp. Ac. Sc. Mem.** ..... { *See Mntp. Ac. Mem.*
- Mntp. Mem. Ac.** ..... { *See Mntp. Ac. Mem.*
- Mntp. Mem. Ac. Sect. Sc.** ..... { *See Mntp. Ac. Mem.*
- Mntp. Mem. Ac. Sect. Med.** ..... { *Mémoires de l'Académie des Sciences et Lettres: Section de la Médecine. Montpellier.*
- 1849— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; Oxon.B.; R.S.
- Mntp. Rec. Bul.** ..... { *Recueil des Bulletins publiés par la Société Libre des Sciences, etc., de Montpellier. Montpellier.*
- 1803—14. B.M.; Camb.U.; Oxon.B.i.
- Mod. Ac. Sc. Mem.** ..... { *Memorie della Regia Accademia di Scienze, Lettere ed Arti di Modena. Modena.*
- Mod. Mem. Ac. Sc.** ..... { 1833— B.M.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Math.S.i.;
- N.H.M.; Oxon.B.i.; U.C.L.i.
- Mod. Mem. S. It.** ..... { *Memorie di Matematica e di Fisica della Società Italiana delle Scienze. Modena.*
- Mod. S. It. Mem.** ..... { 1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.;
- Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.
- See **Mem. S. It. Mem., Verona Mem. S. It. and Verona S. It. Mem.**

## List of Serial Publications

|                                   |  |
|-----------------------------------|--|
| <b>Mod. S. Nt. At.</b> .....      | Atti della Società dei Naturalisti di Modena. Modena.<br>1888— Camb.U.; Dub.R.I.A.i.; N.H.M.   |
| <b>Moigno An. Cosmos</b> .....    | Annuaire du Cosmos; Moigno. Paris.<br>1859—70. B.M.  |
| <b>Moigno Cosmos</b> .....        | { Cosmos. Révue Encyclopédique Hebdomadaire des Progrès des<br>Sciences; Moigno. Paris.  |
| <b>Mondes (les)</b> .....         |  |
|                                   | 1852— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; N.H.M.i.;<br>Oxon.B.; P.O.i.; R.A.S.i.; R.S.  |
| <b>Mon. Sc.</b> .....             | Le Moniteur Scientifique du Chimiste et du Manufacturier; Quesneville. Paris.<br>1857— B.M.; Chem.S.i.; Dub.R.C.S.i.; Oxon.B.; P.O.; R.A.S.i.  |
| <b>Mosc. Bil. S. Nt.</b> .....    | Bulletin de la Société Impériale des Naturalistes. Moscou.<br>1829— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.;<br>Dub.R.I.A.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.i.;<br>Oxon.R.; P.O.i.; R.A.S.i.; R.S.   |
|                                   | See <b>Mosc. S. Nt. Bil.</b>   |
| <b>Mosc. Obs. A.</b> .....        | Annales de l'Observatoire de Moscou; Bredichin. Moscou.<br>1874— B.M.i.; Camb.U.; R.A.S.; R.S.   |
| <b>Mosc. S. Nt. Bil.</b> .....    | See <b>Mosc. Bil. S. Nt.</b>   |
| <b>Mosc. S. Sc. Bil.</b> .....    | Bulletin of the Imperial Society of Lovers of Natural Science,<br>Anthropology and Ethnography, in connection with the Imperial<br>University of Moscow. [In Russian.] Moscow.<br>1865— B.M.i.; Edinb.R.S.i.; N.H.M.i.   |
| <b>Mosc. Un. Mem.</b> .....       | Scientific Memoirs of the Imperial University of Moscow. [In<br>Russian.] Moscow.<br>— B.M.i.; Chem.S.i.; N.H.M.i.   |
| <b>Mosc. Un. Mem. (Ps.-Mth.)</b>  | Scientific Memoirs of the Imperial University of Moscow. Section<br>Phys.-Math. Moscow.<br>1880—96. Chem.S.  |
| <b>Mth. A.</b> .....              | Mathematische Annalen; Clebsch. Leipzig.<br>1869— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.i.;<br>Dub.R.D.S.i.; Dub.T.C.i.; Edinb.U.; Glasg.U.; Math.S.; Oxon.R.;<br>R.S.; U.C.L.   |
| <b>Mth. Gz.</b> .....             | The Mathematical Gazette. London.<br>1894— B.M.; Camb.U.; Math.S.; U.C.L.i.  |
| <b>Mth. Misc.</b> .....           | The Mathematical Miscellany; Gill. New York.<br>1836—39. U.C.L.  |
| <b>Mth. Nt. B. Ung.</b> .....     | Mathematische und naturwissenschaftliche Berichte aus Ungarn.<br>Berlin.<br>1882— Camb.P.S.; Chem.S.; Edinb.R.S.; R.A.S.i.; R.S.   |
| <b>Mth. Term. Éta.</b> .....      | { Matematikai és természettudományi Értesítő. Kiadja a Magyar<br>Tudományos Akadémia. [Mathematical and Natural Science<br>Report, published by the Hungarian Academy of Science.] Budapest.<br>1883— B.M.i.; Edinb.R.S.; N.H.M.; R.S.                               |
| <b>Mth. Term. Éta.</b> .....      |  |
| <b>Mth. Ts.</b> .....             | Mathematisk Tidsskrift. Kjøbenhavn.<br>1859— B.M.; Camb.U.; Oxon.B.; R.S.i.  |
| <b>Mulhouse Bil.</b> .....        | Bulletin de la Société Industrielle de Mulhouse. Mulhouse.<br>1828— B.M.i.; Camb.U.i.; Chem.S.i.; Dub.R.C.S.i.; Dub.T.C.i.;<br>Glasg.P.S.i.; Glasg.U.i.; Oxon.B.i.; P.O.   |
| <b>Mulhouse Bil. S. In.</b> ..... | { Abhandlungen der mathematisch-physikalischen Classe der Königl.<br>Bayerischen Akademie der Wissenschaften. München.<br>1832— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.;<br>Edinb.R.S.; Edinb.U.; Glasg.U.; Linn.S.; Oxon.B.; Oxon.R.;<br>P.O.; R.A.S.i.; R.S. |
| <b>Mulhouse S. In. Bil.</b> ..... |  |
| <b>Münch. Ab.</b> .....           | { Sitzungsberichte der Mathematisch-Physikalischen Classe der K. B.<br>Akademie der Wissenschaften zu München. München.<br>1871— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.;<br>Edinb.R.S.; Glasg.U.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.;<br>R.A.S.; R.S.; U.C.L.i.  |
| <b>Münch. Ak. Ab.</b> .....       |  |
| <b>Münch. Ak. Sh.</b> .....       | Denkschriften der Königl. Bayerischen Akademie der Wissenschaften<br>zu München. München u. Salzburg.<br>1808—24. B.M.; Camb.P.S.; Camb.U.; N.H.M.; Oxon.R.; P.O.; R.S.  |
| <b>Münch. D.</b> .....            | Sitzungsberichte der Königl. Bayerischen Akademie der Wissen-<br>schaften zu München. München.<br>1860—70. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.i.;<br>Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Linn.S.; N.H.M.;<br>Oxon.B.; P.O.i.; R.A.S.; R.S.               |
| <b>Münch. Sb.</b> .....           |  |

## List of Serial Publications

- N. A. Mth.** ..... Nouvelles Annales de Mathématiques. Paris.  
1842— B.M.; Camb.U.; Dub.T.C.; Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.i.
- Nancy Mm. S. Sc.** ..... Mémoires de la Société [Royale] des Sciences, Lettres, et Arts de Nancy. Nancy.  
1833— B.M.; Camb.U.i.; N.H.M.i.; Oxon.B.; R.S.i.
- Nancy S. Sc. Bul.** ..... Bulletin de la Société des Sciences de Nancy. Nancy, Paris.  
1873— B.M.; N.H.M.; R.S.
- N. Antol. Sc.** ..... Nuova Antologia di Scienze, Lettere ed Arti. Firenze e Roma.  
1866— B.M.; Dub.N.L.I.i.; N.H.M.
- Nap. Ac. At.** ..... Atti della Reale Accademia delle Scienze e Belle Lettere; Sezione della Società R. Barbonica. Napoli.  
1819—51. B.M.; Camb.U.; Dub.R.D.S.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.  
Atti della R. Accademia delle Scienze Fisiche e Matematiche. Napoli.  
1863—82; 1888— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; R.A.S.i.; R.S.  
See **Nap. At. Ac. and Nap. At. Ac. Sc.**
- Nap. Ac. Pont. At.** ..... Atti dell' Accademia Pontaniana di Napoli. Napoli.  
1832— B.M.; Camb.U.; Dub.R.D.S.i.; N.H.M.; R.S.i.; U.C.L.i.
- Nap. Ac. Sc. Mm.** ..... Memorie della R. Accademia delle Scienze, etc. Napoli.  
1852—57. B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.  
See **Nap. Mm. Ac. Sc.**
- Nap. At. Ac.** ..... } See **Nap. Ac. At.**  
**Nap. At. Ac. Sc.** ..... }  
**Nap. At. I. Inc.** ..... Atti del Real Istituto d' Incoraggiamento alle Scienze Naturali di Napoli. Napoli.  
1811— B.M.; Camb.U.; Edinb.R.S.i.; N.H.M.; Oxon.B.; P.O.; R.S.i.  
See **Nap. I. Inc. At.**
- Nap. At. S. Pont.** ..... Atti della Società Pontaniana di Napoli. Napoli.  
1810—47. B.M.; Camb.U.; N.H.M.; R.S.  
See **Nap. S. Pont. At.**
- Nap. I. Inc. At.** ..... See **Nap. At. I. Inc.**
- Nap. Mm. Ac. Sc.** ..... See **Nap. Ac. Sc. Mm.**
- Nap. Ma.** ..... Museo di Letteratura e Filosofia; Gatti. Napoli.  
1842—62. B.M.; Oxon.B.
- Nap. Rd.** ..... Rendiconto dell' Accademia delle Scienze Fisiche e Matematiche. Napoli.  
1862— Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; Linn.S.i.; Math.S.; N.H.M.; Oxon.R.i.; P.O.; R.A.S.; R.S.; U.C.L.i.  
See **Nap. At. S. Pont.**
- Nap. S. Pont. At.** ..... See **Nap. At. S. Pont.**
- N. Arch. Wisk.** ..... Nieuw Archief voor Wiskunde. Amsterdam.  
1875— Camb.P.S.i.; Edinb.R.S.i.; Math.S.
- N. A. Sc. Nt.** ..... Nuovi Annali delle Scienze naturali; Alessandrini, Bertoloni, Gherardi, e Ranzani. Bologna.  
1838—54. Camb.U.; N.H.M.; Oxon.B.i.; R.S.  
See **Bologna N. A.**
- N. Cim.** ..... Il Nuovo Cimento, Giornale di Fisica, Chimica e Storia Naturale. Pisa.  
1855— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.i.; N.H.M.; Oxon.R.i.; P.O.i.; R.S.
- Nebr. Un. Stud.** ..... University Studies. Published by the University of Nebraska. Lincoln, Nebraska.  
1888— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Oxon.B.; R.S.
- N. Eng. I. Min. E. T.** ..... Transactions of the North of England Institute of Mining Engineers. Newcastle-upon-Tyne.  
1852— B.M.; Camb.U.; Edinb.R.S.i.; Oxon.B.i.; P.O.i.; R.S.
- Neuch. Bul.** ..... { Bulletin de la Société des Sciences Naturelles de Neuchâtel.  
**Neuch. S. Sc. Bul.** ..... { Neuchâtel.  
1844— B.M.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.i.
- NH. Rv.** ..... The Natural History Review and Quarterly Journal of Science. London and Dublin.



## List of Serial Publications

- 1854—60. B.M.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.R.; P.O.; U.C.L.i.  
The Natural History Review; a Quarterly Journal of Biological Science. London.
- 1861—65. B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.
- Nicholson J.** ..... Journal of Natural Philosophy, Chemistry, and the Arts; Nicholson. London.
- 1797—1818. B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.
- Niort Mm. de l'Athénée** ..... Mémoires de l'Athénée de Niort, Société Libre des Sciences et des Arts du département des Deux-Sèvres. Niort.
- 1808 (?). B.M.; Oxon.B.; R.S.i.
- N. Jb. Min.** ..... Neues Jahrbuch für Mineralogie, Geologie und Paläontologie. Stuttgart.
- 1833— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Geol.M.; N.H.M.; Oxon.R.; R.S.
- N. Mg. Ntvd.** ..... Nyt Magazin for Naturvidenskaberne. Christiania.
- 1838— Camb.U.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.
- Norake Vd. Skr.** ..... Det Kongelige Norske Videnskabselskabs Skrifter i det 19de Aarhundrede. Kjøbenhavn og Trondhjem.
- 1817— B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; N.H.M.; R.S. See **Thron. Skr.**
- N. Ra. S. Mt. Mm. (Mth.)** ..... Memoirs of the Mathematical Section of the New Russian Society of Naturalists. [In Russian.] Odessa.
- 1878— B.M.i.; Dub.R.I.A.; Math.S.i.; R.S.i.
- N. S. W. Ph. S. T.** ..... Transactions of the Philosophical Society of New South Wales. Sydney.
1866. Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.i.; Glasg.U.; Linn.S.; Oxon.B.; R.A.S.; R.S.
- N. S. W. R. S. J.** ..... Journal and Proceedings of the Royal Society of New South Wales. Sydney.
- 1876— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.i.; Geol.M.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.S.
- N. S. W. R. S. T.** ..... Transactions of the Royal Society of New South Wales. Sydney.
- 1867—75. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Glasg.U.i.; N.H.M.; R.A.S.; R.S.
- Nt.** ..... Nature: a weekly illustrated Journal of Science. London.
- 1870— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- N. Ta. Mth.** ..... Nyt Tidsskrift for Mathematik. Kjøbenhavn.
- 1890— B.M.; Math.S.i.
- Nürnb. Nt. Gs. Ab.** ..... Abhandlungen der Naturhistorischen Gesellschaft zu Nürnberg. Nürnberg.
- 1852— B.M.i.; Camb.U.; Dub.R.I.A.; N.H.M.; R.S.i.
- Nv. Archt. T.** ..... Transactions of the Institution of Naval Architects. London.
- 1860— B.M.; Camb.U.; Dub.R.I.A.; Edinb.U.; P.O.; R.S.; U.C.L.i.
- N.-Vorp. Mt.** ..... Mittheilungen aus dem Naturwissenschaftlichen Vereine von Neu-Vorpommern und Rügen. Berlin.
- 1869— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; N.H.M.
- N. Y. Am. Mth. S. Bul.** ..... Bulletin of the American Mathematical Society. New York.
- 1895— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Glasg.U.; Math.S.; Oxon.B.; Oxon.R.; R.S.i.
- N. Y. Am. Mth. S. T.** ..... Transactions of the American Mathematical Society. Lancaster, Pa. and New York.
- 1900— Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.; Oxon.B.; Oxon.R.; R.S.
- N. Y. Mth. S. Bul.** ..... Bulletin of the New York Mathematical Society. New York.
- 1892—94. B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Glasg.P.S.; Math.S.; Oxon.B.; Oxon.R.; R.A.S.

## List of Serial Publications

- N. E. I. T.**..... Transactions and Proceedings of the New Zealand Institute. Wellington.  
1868— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Glasg.P.S.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.; U.C.L.i.
- Obs.**..... The Observatory. A monthly Review of Astronomy. London.  
1878— Camb.P.S.; Camb.U.; Dub.T.C.i.; Edinb.R.S.; Oxon.R.; P.O.; R.A.S.
- Oestr. Z. Bergw.**..... Oesterreichische Zeitschrift für Berg- und Hüttenwesen; von Otto Freiherrn von Hingenau. Wien.  
1853— B.M.; P.O.
- Oken Isis**..... Isis, oder Encyclopädische Zeitung; Oken. Jena.  
1817—48. B.M.i.; Camb.U.; Edinb.U.; Linn.S.i.; N.H.M.; Oxon.B.(R.); R.S.
- Opusc. Mt. Pis.**..... Opuscoli matematici e fisici di diversi Autori. Milano.  
1832—34. R.S.
- Orv.-Term. Éta. (Term. Szak)**..... Orvos-Természettudományi Értesítő a Kolozsvári Orvos-Természettudományi Társulat és az Erdélyi Múzeum-Egyet Természettudományi Szakosztályának..... [Medical and Natural History Proceedings of the Sections of the Klausenburg Medical and Natural History Society and of the Natural History Section of the Museum Association of Transylvania.] Kolozsvár [Klausenburg].  
1879— N.H.M.; R.S.i.
- Padova Ac. At. e Mem.**... Atti e Memorie della R. Accademia di Scienze, Lettere ed Arti in Padova. Nuova serie. Padova.  
1885— Edinb.R.S.; N.H.M.
- Padova Mem. Ac.**..... Memorie dell' Accademia di Scienze, Lettere, ed Arti di Padova. Padova.  
1809. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.
- Padova N. Sag.**..... Nuovi Saggi dell' Accademia di Scienze, Lettere, ed Arti di Padova. Padova.  
1817—83. B.M.i.; Camb.U.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; N.H.M.; Oxon.B.i.; R.S.i.
- Padova Rv. Period.**..... Revista Periodica dei Lavori della I. R. Accademia di Scienze, Lettere, ed Arti di Padova. Padova.  
1851— B.M.; Edinb.R.S.i.; N.H.M.; R.S.i.
- Palermo Ac. At.**..... (Atti dell' Accademia di Scienze, Lettere ed Arti di Palermo. Palermo.  
1845— B.M.; Camb.U.i.; Dub.R.I.A.; Dub.T.C.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.
- Palermo At.**.....
- Palermo Cir. Mt. Rd.**... Rendiconti del Circolo Matematico di Palermo. Palermo.  
1887— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Math.S.; R.S.
- Palermo G. Sc. Mt.**..... Giornale di Scienze naturali ed economiche, pubblicato per cura del Consiglio di Perfezionamento annesso al R. Istituto Tecnico di Palermo. Palermo.  
1865— B.M.; Camb.U.; Dub.R.D.S.i.; R.S.
- Palomba Rac.**..... Raccolta di Lettere, etc. intorno alla Fisica ed alle Mathematiche; Palomba. Roma.  
1845—48. B.M.i.
- Par. A. Cons.**..... Annales du Conservatoire des Arts et Métiers. Paris.  
1861— B.M.; Camb.U.; Glasg.P.S.i.; Oxon.B.; P.O.; R.S.  
See **A. Cons. Arts et Mét.**
- Par. Ac. Sc. Mem.**..... Mémoires de l'Académie des Sciences de l'Institut de France. Paris.  
1816— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.T.C.i.; Edinb.R.S.i.; Edinb.U.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; U.C.L.
- Par. A. Éc. Norm.**..... See **Par. Mem. Ac. Sc.**  
Annales scientifiques de l'École Normale Supérieure. Paris.  
1864— B.M.; Camb.P.S.i.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; Edinb.R.S.i.; Edinb.U.i.; Glasg.U.i.; Oxon.B.; R.S.
- Par. An. Mét.**..... See **Par. Éc. Norm. A.**  
Annuaire de la Société Météorologique de France. Paris.  
1849— B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; R.S.i.
- Par. An. S. Mét.**.....
- Par. A. Obs.**..... Annales de l'Observatoire de Paris; mémoires publiées par U. J. Le Verrier. Paris.

## List of Serial Publications

- 1855— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.; Oxon.B.; R.A.S.; R.S.  
*See Par. Obs. A. and Par. Obs. A. (Mm.)*
- Par. A. Pon. Chauss.** ..... Annales des Ponts et Chaussées. Mémoires et documents relatifs à l'Art des Constructions et au Service de l'Ingénieur. Paris.  
 1831— B.M.; Camb.U.; Edinb.U.i.; Glasg.P.S.i.; Glasg.U.i.; P.O.; R.S.i.  
*See A. Pon. Chauss.*
- Par. Bul. S. Encour.** ..... Bulletin de la Société d'Encouragement pour l'Industrie Nationale. Paris.  
 1802— Camb.U.; Dub.R.C.S.i.; Dub.T.C.i.; Edinb.R.S.i.; Glasg.P.S.i.; Oxon.B.; P.O.; R.S.
- Par. Bul. S. Gg.** ..... Bulletin de la Société de Géographie. Paris.  
 1822— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; Oxon.B.; R.S.; U.C.L.i.
- Par. Bul. S. Philm.** ..... *See Par. Gg. S. Bul. and Par. S. Gg. Bul.*  
 Bulletin des Sciences de la Société Philomathique de Paris. Paris.  
 1791—1805; 1814—24; 1864— B.M.i.; Camb.U.; Dub.T.C.i.; Edinb.R.S.i.; Glasg.U.i.; Math.S.i.; N.H.M.; Oxon.R.i.; P.O.i.; R.A.S.i.; R.S.; U.C.L.
- Par. Éc. Norm. A.** ..... *See Par. S. Philm. Bul.*  
*See Par. A. Éc. Norm.*
- Par. Éc. Pol. Cor.** ..... Correspondance sur l'École Polytechnique, à l'usage des Élèves de cette École; Hachette. Paris.  
 1808—16. B.M.i.; Oxon.B.; R.S.; U.C.L.
- Par. Éc. Pol. J.** ..... Journal de l'École Polytechnique. Paris.  
 1795— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Linn.S.i.; Math.S.i.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; U.C.L.i.
- Par. Gg. S. Bul.** ..... *See Par. J. Éc. Pol.*  
*See Par. Bul. S. Gg.*
- Par. Ing. Civ. Mm.** ..... Mémoires et Comptes Rendus des Travaux de la Société des Ingénieurs Civils. Paris.  
 1848— B.M.; Glasg.U.i.; P.O.  
*See Par. Mm. Ing. Civ.*
- Par. J. Éc. Pol.** ..... *See Par. Éc. Pol. J.*
- Par. Mm. Ac. Sc.** ..... *See Par. Ac. Sc. Mm.*
- Par. Mm. de l'I.** ..... Mémoires de la Classe des Sciences mathématiques et physiques de l'Institut. Paris.  
 1798—1815. B.M.; Edinb.R.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; U.C.L.
- Par. Mm. Ing. Civ.** ..... *See Par. Ing. Civ. Mm.*
- Par. Mm. Sav. Étr.** ..... Mémoires présentés à l'Institut des Sciences, Lettres et Arts par divers Savans, et lus dans ses Assemblées: Sciences Mathématiques et Physiques. Paris.  
 1806—11. B.M.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; N.H.M.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.  
 Mémoires présentés par divers Savans à l'Académie des Sciences de l'Institut de France. Paris.  
 1827— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- Par. Mm. S. Sav.** ..... Mémoires des Sociétés Savantes et Littéraires de la République Française. Recueillis et rédigés par les Citoyens Prony, etc. Paris.  
 1801—02. B.M.; Oxon.B.; R.S.
- Par. Obs. A.** ..... )  
**Par. Obs. A. (Mm.)** ..... ) *See Par. A. Obs.*
- Par. Poids et Mes. PV.** ..... Comité International des Poids et Mesures. Procès-Verbaux des Séances. Paris.  
 1875— Camb.P.S.; Camb.U.i.; Dub.R.D.S.; Oxon.R.; P.O.; R.A.S.; R.S.
- Par. S. Amat. Tr.** ..... Notices des Travaux de la Société des Amateurs des Sciences physiques et naturelles de Paris. Paris.  
 1807—08.  
*See Par. Tr. S. Amat.*
- Par. S. Ap. Bul.** ..... Bulletin de la Société d'Anthropologie de Paris. Paris.  
 1860— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.i.; Oxon.R.; R.S.

## List of Serial Publications

- Par. S4. Éc. Norm.** ..... Séances des Écoles Normales. Paris.  
1800—01. R.S.; U.C.L.
- Par. S. Gg. Eil.** ..... See **Par. Eil. S. Gg. and Par. Gg. S. Eil.**
- Par. S. Mth. Eil.** ..... Bulletin de la Société Mathématique de France. Paris.  
1873— B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Math.S.;  
Oxon.R.; R.A.S.; R.S.
- Par. S. Philm. Eil.** ..... See **Par. Eil. S. Philm.**
- Par. S. Philm. Mem. Cent.** ..... Mémoires publiés par la Société Philomathique à l'occasion du  
Centenaire de sa Fondation. Paris.  
1886. B.M.; Edinb.R.S.; N.H.M.; R.A.S.; R.S.
- Par. S. Philm. N. Eil.** ..... Nouveau Bulletin des Sciences de la Société Philomathique de Paris.  
Paris.  
1807—1813; 1825—26; 1832—33. B.M.i.; Camb.U.; Dub.T.C.;  
N.H.M.; P.O.i.; R.S.; U.C.L.
- Par. S. Philm. PV.** ..... Extraits des Procès-Verbaux des Séances de la Société Philomathique.  
Paris.  
1836—63. N.H.M.; R.S.
- Par. T. Nauk Śc. Pam.** ... Pamiętnik Towarzystwa Nauk Ściślych w Paryżu. Paris.  
1871—82. B.M.; N.H.M.
- Par. Tr. S. Amat.** ..... See **Par. S. Amat. Tr.**
- Perpignan Eil. S. Ag.** ..... [Bulletin de la] Société Agricole, Scientifique, et Littéraire des  
Pyrénées-Orientales. Perpignan.  
1834— N.H.M.; R.S.i.
- Peterm. Mt.** ..... Mittheilungen aus Justus Perthes' Geographischer Anstalt über  
wichtige neue Erforschungen auf dem Gesamtgebiete der  
Geographie; Petermann. Gotha.  
1855— B.M.; Camb.U.; Dub.R.C.S.; Geol.M.i.; Glasg.P.S.i.;  
Glasg.U.; N.H.M.i.; Oxon.B.; Oxon.R.; R.S.; U.C.L.i.
- Phil. Trans.** ..... Philosophical Transactions of the Royal Society of London.  
London.  
1665— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.C.S.;  
Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.  
P.S.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.;  
Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.i.
- Ph. Mag.** ..... The London, Edinburgh, and Dublin Philosophical Magazine and  
Journal of Science. London.  
1827— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.; Dub.  
R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Glasg.P.S.i.; Glasg.U.;  
Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.;  
R.S.; U.C.L.
- Phm. J.** ..... The Pharmaceutical Journal and Transactions. London.  
1841— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.T.C.i.;  
Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.B.(B.); R.S.i.;  
U.C.L.
- Ph. Stud.** ..... Philosophische Studien herausgegeben von Wilhelm Wundt.  
Leipzig.  
1883— Camb.U.; Dub.T.C.; Edinb.U.; Oxon.B.; R.S.; U.C.L.
- Pisa A. Scuola Norm.** ... Annali della R. Scuola Normale Superiore di Pisa. Scienze Fisiche  
e Matematiche. Pisa.  
1871. Oxon.B.; Oxon.R.; R.S.
- Pisa A. Un. Tosc.** ..... Annali delle Università Toscane. (Parte 2da.) Scienze Cosmo-  
logiche. Pisa.
- Pisa A. Un. Tosc. Sc.** ..... 1846— Camb.U.i.; N.H.M.; R.S.i.
- Pisa N. G.** ..... Nuovo Giornale de' Letterati. Pisa.  
1822—39. B.M.; Camb.U.; Oxon.B.
- Pisa S. Tosc. At. (PV.)** ... Atti della Società Toscana di Scienze Naturali residente in Pisa.  
Processi Verballi. Pisa.  
1875— B.M.; Camb.P.S.i.; Dub.T.C.; N.H.M.; R.S.
- Pistoja At. Ac.** ..... Atti della R. Accademia Pistoiese di Scienze, Lettere, ed Arti:  
Memorie di Matematica e Fisica, per l' anno 1816. Pistoja.  
1816. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.
- Pogg. A.** ..... Annalen der Physik und Chemie; Poggendorff. Leipzig.  
1824— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.; Dub.R.I.A.;  
Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.i.;  
N.H.M.; Oxon.B.(B.); P.O.; R.S.; U.C.L.i.
- Poligrafo** ..... See **A. Pa. C.**  
Il Poligrafo: Giornale di Scienze, Lettere, ed Arti; Orti. Verona.  
1830—45. B.M.; Oxon.B.

## List of Serial Publications

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| <b>Pol. Mt.</b> .....                              | Polytechnische Mittheilungen, unter Mitwirkung von Professoren höherer technischer Lehranstalten. Tübingen.<br>1844—46. B.M.; R.S.  |
| <b>Pop. As.</b> .....                              | Popular Astronomy. Northfield, Minnesota.<br>1894— B.M.; Glasg.U.; R.A.S.   |
| <b>Prace Mt.-Fiz.</b> .....                        | Prace Matematyczno-Fizyczne. Warsaw.<br>1888— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Math.S.; R.S.i.  |
| <b>Prag Ab.</b> .....                              | Abhandlungen der k. Böhmischen Gesellschaft der Wissenschaften. Prag.<br>1804—92. B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.i.; Edinb. R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.i.<br><i>See Böhlm. Ga. Ab.</i>  |
| <b>Prag České Ak. Fr. Jos. Fam.</b> .....          | Památník na oslavu padesátiletého panovnického jubilea jeho veličenstva císaře a krále Františka Josefa I. Vydala Česká Akademie Císaře Františka Josefa pro Vědy, Slovesnost a Umění. [Memoirs in honour of the jubilee of his Imperial and Royal Majesty Franz Joseph I. Edited by the Imperial Bohemian Franz-Joseph Academy of Sciences, Literature and Art.] Praze. (Prag.)<br>1898. Camb.P.S.; N.H.M. |
| <b>Prag České Ak. Fr. Jos. Rz.</b> .....           | Rozprawy České Akademie Císaře Františka Josefa Pro Vědy, Slovesnost a Umění. [Memoirs of the Imperial Bohemian Franz-Joseph Academy of Sciences, Literature and Art.] Prag.<br>1891— B.M.; Edinb.R.S.; N.H.M.i.  |
| <b>Prag Fr. Jos. Ac. Sc. Ill. (Mth. Nt.)</b> ..... | Académie des Sciences de l'Empereur François Joseph I (Česká Akademie Císaře Františka Josefa I). Bulletin International. Résumé des Travaux présentés. Sciences Mathématiques et Naturelles. Prag.<br>1897— Edinb.R.S.; N.H.M.i.   |
| <b>Prag Jb. Böhlm. Mz.</b> .....                   | Jahrbücher des Böhmischen Museums für Natur- und Länderkunde, etc. Prag.<br>1830—81. B.M.; N.H.M.   |
| <b>Prag Sb.</b> .....                              | Sitzungsberichte der k. Böhmischen Gesellschaft der Wissenschaften in Prag. Prag.<br>1859— Camb.P.S.; Camb.U.i.; Dub.R.D.S.; Dub.R.I.A.; Edinb. R.S.i.; Linn.S.i.; N.H.M.; R.S.; U.C.L.i.   |
| <b>Presse Sc.</b> .....                            | Presse Scientifique des Deux Mondes. Paris.<br>1860—66. B.M.; R.S.i.  |
| <b>Ph. Rv.</b> .....                               | The Physical Review. New York, London, Berlin.<br>1894— B.M.; Camb.P.S.; Camb.U.; Dub.R.C.S.; Edinb.R.S.; Edinb.U.i.; Oxon.R.; P.O.; R.S.   |
| <b>Ph. Z.</b> .....                                | Physikalische Zeitschrift. Leipzig.<br>1899— Camb.P.S.; Edinb.U.; Oxon.R.; R.S.   |
| <b>Queb. T.</b> .....                              | { Transactions of the Literary and Historical Society of Quebec.<br>Quebec.<br>1829— B.M.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; R.S.i.  |
| <b>Queb. T. Lt. S.</b> .....                       |   |
| <b>Quetelet Cor. Mth.</b> .....                    | Correspondance Mathématique et Physique; publiée par MM. Garnier et Quetelet. Gand et Bruxelles.<br>1825—39. B.M.; Camb.U.; R.A.S.i.; R.S.; U.C.L.  |
| <b>QJ. Mth.</b> .....                              | The Quarterly Journal of Pure and Applied Mathematics. London.<br>1855— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Math.S.i.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.   |
| <b>QJ. Sc.</b> .....                               | The Journal of Science and the Arts; edited at the Royal Institution of Great Britain. London. Continued as: Quarterly Journal of Science, Literature and Arts. London.<br>1816—30. B.M.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Glasg.U.; Oxon.B.; Oxon.R.; R.S.; U.C.L.  |
| <b>Railroad &amp; Eng. J.</b> .....                | The Railroad and Engineering Journal. New York.<br>1887—92. B.M.; P.O.  |
| <b>Ranuzzi An. Gg.</b> .....                       | Annuario geografico Italiano; Ranuzzi. Bologna.<br>1844—45. B.M.; Camb.U.   |

## List of Serial Publications

- Rec. Mth. (Moscou) .....** Recueil mathématique. Publié par la Société Mathématique de Moscou. [In Russian.] Moscou.  
1866— R.S.
- R. E. Pp. ....** Papers on subjects connected with the duties of the Corps of Royal Engineers. London.  
1844— Camb.U.; Geol.M.i.; Glasg.U.i.; P.O.i.
- Rheind. Westphal. Sb. ...** Sitzungsbericht des Naturhistorischen Vereins der Preussischen Rheinlande und Westphalens. Bonn.  
1844— Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.i.
- Riga Cor.-Bl. ....** Correspondenzblatt des Naturforscher-Vereins zu Riga. Riga.  
1846— B.M.; Dub.R.I.A.i.; N.H.M.; R.S.i.
- R. I. J. ....** Journal of the Royal Institution of Great Britain. London.  
1802—08; 1830—31. Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.i.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rio Arch. Palestr. ....** Archivos da Palestra Scientifica do Rio de Janeiro. Rio de Janeiro.  
1858. N.H.M.; R.S.
- R. I. P. ....** Notice of the Proceedings at the meetings of the members of the Royal Institution, with Abstracts of the Discourses delivered at the Evening Meetings. London.  
1851— B.M.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Rm. At. ....** { Atti dell' Accademia Pontificia dei Nuovi Lincei. Roma.  
**Rm. At. N. Linc. ....** { 1847— B.M.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.
- Rm. At. R. Ac. ....** { See **Rm. N. Linc. At.**  
Atti della Reale Accademia dei Lincei. Roma.  
1870—83. B.M.; Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rm. Cor. Sc. ....** { See **Rm. R. Ac. Linc. At.**  
Corrispondenza Scientifica in Roma per le avanzamento delle Scienze, etc. Roma.  
1848—
- Rm. Mem. Osserv. ....** { See **Rm. S. Cor.**  
Memorie dell' Osservatorio dell' Università Gregoriana del Collegio Romano, diretto dai PP. della Compagnia di Gesu. Roma.  
1850—68. B.M.; R.A.S.; R.S.
- Rm. N. Linc. At. ....** { See **Rm. At. and Rm. At. N. Linc.**  
**Rm. N. Linc. Mem. ....** { Memorie della Pontificia Accademia dei Nuovi Lincei. Roma.  
1887— Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; R.S.
- Rm. R. Ac. Linc. At. ....** { See **Rm. At. R. Ac.**  
**Rm. R. Ac. Linc. Mem. ...** { Atti della R. Accademia dei Lincei. Memorie della Classe di Scienze fisiche, matematiche e naturali. Roma.  
1877— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.
- Rm. R. Ac. Linc. Rd. ....** { Atti della R. Accademia dei Lincei. Rendiconti. Roma.  
1895— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- Rm. R. Ac. Linc. T. ....** { Atti della R. Accademia dei Lincei. Transunti. Roma.  
1877—84. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- Rm. S. Cor. ....** { See **Rm. Cor. Sc.**  
**Rm. S. It. Mem. ....** { Memorie di Matematica e di Fisica, della Società Italiana delle Scienze. Napoli e Roma.  
1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rochester (N. Y.) Ac. Sc. P. ....** { See **Mod. Mem. S. It., Verona Mem. S. It. and Verona S. It. Mem.**  
Proceedings of the Rochester Academy of Sciences. Rochester, N.Y.  
1890— B.M.; Camb.P.S.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.S.; U.C.L.i.
- Rot. N. Vh. ....** Nieuwe Verhandelingen van het Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte te Rotterdam. Rotterdam.

## List of Serial Publications

- 1800— B.M.i.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Oxon.B.; R.S.
- Rouen Bul. S. Ém.** ..... Bulletins [des travaux] de la Société Libre d'Émulation de Rouen. Rouen.
- 1837— B.M.; Oxon.B.
- Rouen Ac. Tr.** ..... } Précis analytique des Travaux de l'Académie des Sciences, Belles-
- Rouen Tr. Ac.** ..... } Lettres, et Arts de Rouen. Rouen.
- 1804— B.M.; Camb.U.; Dub.R.I.A.; Dub.T.C.; N.H.M.i.; Oxon.B.; R.S.i.
- Rpm. Mth.** ..... Repertorium der literarischen Arbeiten aus dem Gebiete der reinen und angewandten Mathematik. Leipzig.
- 1877—79. Camb.U.; R.S.
- Rpm. Ph.** ..... Repertorium der Physik. Enthaltend eine vollständige Zusammenstellung der neuern Fortschritte dieser Wissenschaft. Berlin.
- 1837—49. Chem.S.; Glasg.P.S.i.; P.O.; R.S.; U.C.L.
- Rs. Gg. Gs. D.** ..... Denkschriften der Russischen Geographischen Gesellschaft zu St Petersburg. Weimar.
1849. B.M.; Camb.U.; R.S.
- R. S. P.** ..... Proceedings of the Royal Society of London. London.
- 1832— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Rs. Ph.-C. S. J.** ..... Journal of the Russian Physico-Chemical Society of the Imperial University of St Petersburg. [In Russian.] St Petersburg.
- 1869— Camb.P.S.i.; Chem.S.; Edinb.R.S.i.; N.H.M.
- R. S. Yearbook** ..... Yearbook of the Royal Society of London. (Biography. 1900.)
- Rv. Artl.** ..... Revue d'Artillerie. Paris, Nancy.
- 1872— B.M.; P.O.
- Rv. Brasil.** ..... Revista Brasileira, Jornal de Ciencias, Lettras, e Artes; Oliveira. Rio de Janeiro.
- 1857—61. B.M.; N.H.M.; R.S.i.
- Rv. Cours. Sc.** ..... Revue des Cours Scientifiques de la France et de l'Étranger; Eug. Yung et Em. Alglave. Paris.
- 1863—70. B.M.; Edinb.R.S.i.; Edinb.U.; N.H.M.; Oxon.R.; P.O.; R.S.
- Rv. Ligure** ..... Rivista Ligure, giornale di Lettere, Scienze, etc. Genova.
1843. B.M.; N.H.M.; Oxon.B.
- Rv. Mar.** ..... } Revue maritime et coloniale. Paris.
- Rv. Mar. et Col.** ..... } 1861— B.M.; Oxon.B.; Oxon.R.; P.O.
- Rv. Mt.** ..... Rivista di Matematica. Torino.
- 1891—95. Camb.U.; Oxon.B.; R.S.
- Rv. Mth.** ..... Revue de Mathématiques. (Rivista di Matematica.) Turin.
- 1896— Camb.U.; Oxon.B.; Oxon.R.; R.S.
- Rv. Sc.** ..... La Revue Scientifique de la France et de l'Étranger. Paris.
- 1871— B.M.; Camb.U.; Edinb.R.S.; Edinb.U.; N.H.M.; Oxon.R.; P.O.; R.A.S.i.; R.S.
- Rv. Sc.-Ind.** ..... Rivista Scientifico-Industriale delle principali scoperte ed invenzioni fatte nelle scienze e nelle industrie. Firenze.
- 1869— P.O.
- Rv. Un. Mines** ..... Revue Universelle des Mines, de la Métallurgie, etc. Liège & Paris.
- 1857— B.M.; Camb.U.; Dub.R.I.A.i.; Glasg.P.S.i.; Glasg.U.i.; N.H.M.; P.O.
- See Cuyper Rv. Un.**
- S. Afr. Ph. S. T.** ..... The Transactions of the South African Philosophical Society. Cape Town.
- 1878— B.M.; Camb.P.S.; Camb.U.i.; Chem.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.
- S. Afr. QJ.** ..... The South African Quarterly Journal; edited at the African Institution. Cape Town.
- 1830—35. B.M.i.; Edinb.R.S.i.; N.H.M.
- Santiago de Chile Un. A.** ..... Anales de la Universidad de Chile. Santiago de Chile.
- 1843— B.M.i.; Dub.T.C.; N.H.M.i.; Oxon.B.i.
- See Chile A. Un.**
- Sarthe S. Bul.** ..... Bulletin de la Société d'Agriculture, etc., de la Sarthe. Le Mans.
- 1833— R.S.i.

## List of Serial Publications

- S. Aust. R. S. T.** ..... Transactions and Proceedings and Report of the Royal Society of South Australia. Adelaide.  
1877— Camb.P.S.i.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Linn.S.i.; N.H.M.; P.O.; R.A.S.; R.S.i.
- Sav. Ac. Mm.** ..... ) Mémoires de la Société Académique de Savoie. Chambéry.  
**Sav. Mm. Ac.** ..... 1825— Camb.U.; Dub.R.I.A.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.  
See **Chambéry Mm. Ac. Sav.**
- Sc. Abs.** ..... Science Abstracts. Physics and Electrical Engineering. London.  
1898— Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.
- Sch. Gs. W. D.** ..... Neue Denkschriften der allgemeinen Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Neuchâtel, Zürich, etc.  
1837— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.  
See **Zür. W. D. Sch. Gs.**
- Sch. Gs. Vh.** ..... Verhandlungen der Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Aarau, etc.  
1823— B.M.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.  
See **Sch. W. Gs. Vh.**
- Schlömilch Z.** ..... Zeitschrift für Mathematik und Physik; Schlömilch. Leipzig.  
1856— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.U.; Glasg.U.i.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.i.  
See **Z. Mth. Ph.**
- Sch. W. Gs. Vh.** ..... See **Sch. Gs. Vh.**
- Schumacher As. Ab.** ..... Astronomische Abhandlungen; Schumacher. Altona.  
1823—25. B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; R.A.S.; R.S.
- Schweigger J.** ..... Journal für Chemie und Physik; Schweigger. Nürnberg.  
1811—29. Edinb.R.S.; N.H.M.; Oxon.R.; P.O. Continued as: Neues Jahrbuch der Chemie und Physik; Schweigger-Seidel. Berlin.  
1831—33. B.M.; Chem.S.; Edinb.R.S.; N.H.M.; Oxon.R.; P.O.; R.S.
- Science** ..... Science. Cambridge, Mass., and New York.  
1893— B.M.; Dub.N.L.I.i.; Dub.R.C.S.i.; Edinb.R.S.; Edinb.U.i.; Glasg.P.S.i.; N.H.M.; Oxon.R.i.; P.O.; R.A.S.i.
- Sc. S. Arts T.** ..... Transactions of the Royal Scottish Society of Arts. Edinburgh.  
1841— B.M.i.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Glasg.U.; P.O.; R.S.  
See **Edinb. Sc. S. Arts T. and Edinb. T. Sc. S. Arts.**
- Sid. Mess.** ..... The Sidereal Messenger. Northfield, Minn.  
1863—91. B.M.; R.A.S.
- Siena At. Ac.** ..... Atti dell' Accademia delle Scienze di Siena detta de' Fisis-critici. Siena.  
1761— B.M.; Camb.U.i.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.i.; Oxon.B.; R.S.i.
- Silliman J.** ..... The American Journal of Science and Arts; Silliman. New Haven.  
1818— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.  
See **Am. J. Sc.**
- Skandia** ..... Skandia. Tidskrift för Vetenskap och Konst; utgifven af Svenska Litteratur-Föreningen. Upsala.  
1833—37. B.M.  
Förhandlingar vid det af Skandinaviska Naturforskare och Läkare hållna Môte..... Göteborg, etc.  
1839— Oxon.B.i.; R.S.i.
- Sk. Wt. F.** ..... }  
**Sk. Wt. Mtd. F.** ..... }  
**Sk. Wt. Möt. F.** ..... } Förhandlingerne ved de Skandinaviske Naturforskeres...Møde.... Göteborg, etc.  
1839— B.M.; N.H.M.; R.S.i.
- Smiths. Ct.** ..... Smithsonian Contributions to Knowledge. Washington.  
1848— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Glasg.P.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.S.; U.C.L.i.
- Smiths. Misc. Col.** ..... Smithsonian Miscellaneous Collections. Washington.  
1862— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.S.; U.C.L.i.



## List of Serial Publications

- Smiths. Rp.** ..... Annual Report of the Board of Regents of the Smithsonian Institution. Washington.  
1846— B.M.i.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Geol.M.; Glasg.P.S.i.; Glasg.U.; Linn.S.i.; Math.S.i.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- Spet. It. Mm.** ..... Memorie della Società degli Spettroscopisti Italiani, raccolte e pubblicate per cura del Prof. P. Tacchini. Palermo.  
1872— B.M.i.; Camb.U.; Edinb.R.S.i.; P.O.; R.A.S.; R.S.
- Steierm. Mt.** ..... Mittheilungen des Naturwissenschaftlichen Vereins für Steiermark. Graz.  
1863— B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.; U.C.L.i.
- St. Gal. B.** ..... Bericht über die Thätigkeit der St. Gallischen Naturwissenschaftlichen Gesellschaft. St. Gallen.  
1860— N.H.M.; R.S.i.
- St. Louis Ac. T.** ..... The Transactions of the Academy of Science of St. Louis. St. Louis.  
1856— B.M.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.i.; R.S.
- Stockh. Ac. Hndl.** ..... { Kongliga Svenska Vetenskaps-Akademiens Handlingar. Stockholm.  
1739— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.;  
**Stockh. Ak. Hndl.** ..... { Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; R.A.S.; R.S.  
**Stockh. Ak. Hndl. Bh.** ... Bihang till Kongl. Svenska Vetenskaps-Akademiens Handlingar. Stockholm.  
1872— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Linn.S.i.; N.H.M.; R.A.S.; R.S.
- Stockh. Öfv.** ..... Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar. Stockholm.  
1844— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.A.S.; R.S.; U.C.L.i.
- Stockh. Vt. Ak. Lefn.** ... Lefnadsteckningar öfver Kongl. Svenska Vetenskaps Akademien... ledamöter. Stockholm.  
1869—73. Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Linn.S.i.; R.A.S.; R.S.
- St. Pét. Ac. Mm.** ..... Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg.  
1803— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.S.; U.C.L.i.  
*See St. Pét. Ac. Sc. Mm., St. Pét. Mm. and St. Pét. Mm. As. Sc.*
- St. Pét. Ac. Sc. Bil.** ..... Bulletin Scientifique publié par l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg.  
1836—42.  
Bulletin de la Classe Physico-mathématique de l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg and Leipzig.  
1843—59.  
Bulletin de l'Académie des Sciences de St. Pétersbourg. St. Pétersbourg.  
1860— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.i.; R.S.  
*See St. Pét. Bil. Ac. Sc. and St. Pét. Bull. Sc.*
- St. Pét. Ac. Sc. Mm.** ..... *See St. Pét. Ac. Mm.*
- St. Pét. Ac. Sc. Mm. (Rs.)** ..... Memoirs of the Imperial Academy of Science. [In Russian.] St. Petersburg. Not the same as **St. Pét. Ac. Mm.**  
1862—95. B.M.; Dub.R.I.A.
- St. Pét. Ac. Sc. N. Acta...** Nova Acta Academiae Scientiarum Imperialis Petropolitanae. Petropoli.  
1783—1802. B.M.; Camb.U.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.
- St. Pét. Ac. Sc. Rec.** ..... Recueil des Actes des Séances Publiques de l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg.  
1827—48. B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Edinb.R.S.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.; R.S.
- St. Pét. Bil. Ac. Sc.** ..... { *See St. Pét. Ac. Sc. Bil.*
- St. Pét. Bil. Sc.** ..... {
- St. Pét. Mm.** ..... { *See St. Pét. Ac. Mm.*
- St. Pét. Mm. Ac. Sc.** ..... {
- St. Pét. Mm. Sav. Étr.** ... Mémoires présentés à l'Académie Impériale des Sciences de St. Pétersbourg par divers Savans. St. Pétersbourg.

## List of Serial Publications

- 1831—59. B.M.; Camb.U.; Edinb.R.S.; Glasg.U.; Linn.S.; N.H.M.; R.A.S.; R.S.; U.C.L.i.  
**Strash. Mém. S. Sc.**..... Mémoires de la Société des Sciences Naturelles de Strasbourg. Strasbourg.  
 1830—70. B.M.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.  
**Strash. S. Sc. N. Mém.** ... Nouveaux Mémoires de la Société des Sciences, Agriculture, et Arts du Département du Bas-Rhin. Strasbourg.  
 1832—42; 1859—68. Camb.U.i.; N.H.M.; Oxon.B.; R.S.i.  
**Svea** ..... Svea. Tijdskrift för Vetenskap och Konst. Upsala.  
 1818—31.  
**Sym. Met. Mag.** ..... Symons's Monthly Meteorological Magazine. London.  
 1866— Camb.U.; P.O.; R.S.  
**Tasm. R. S. P.**..... Monthly Notices of Papers and Proceedings of the Royal Society of Tasmania. Hobart.  
 1863— B.M.i.; Camb.P.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.A.S.; R.S.  
**Taylor Sc. Mém.** ..... Scientific Memoirs, selected from the Transactions of Foreign Academies and Learned Societies and from Foreign Journals; Taylor. London.  
 1837—52. B.M.; Camb.U.; Chem.S.i.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; U.C.L.  
**Tel. E. J.** ..... Journal of the Society of Telegraph Engineers. London.  
 1872— B.M.; Camb.P.S.; Camb.U.i.; Dub.T.C.i.; Oxon.B.; Oxon.R.; P.O.; R.S.; U.C.L.  
**Terr. Mag.** ..... Terrestrial Magnetism [and Atmospheric Electricity]. An International Quarterly Journal. Chicago, Cincinnati, Baltimore.  
 1896— Camb.U.i.; R.S.  
**Texas Ac. Sc. T.** ..... Transactions of the Texas Academy of Science. Austin.  
 1892— Camb.P.S.; Edinb.R.S.; Glasg.P.S.; Math.S.i.; N.H.M.; R.S.  
**Thomson A. Ph.**..... Annals of Philosophy, or Magazine of Chemistry, Mineralogy, Mechanics, and the Arts; Thomson. London.  
 1813—26. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.i.  
**Thron. Skr.** ..... Det Kongelige Norske Videnskabselskabs Skrifter i det 19de Aarhundrede. Kjøbenhavn og Thronhjelm.  
 1817— B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; N.H.M.; R.S.  
*See Norske Vid. Skr.*  
**Tilloch Ph. Mag.** ..... The Philosophical Magazine, comprehending the various branches of Science, the Liberal and Fine Arts, Geology, Agriculture, Manufactures, and Commerce. London.  
 1798—1826. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.  
**Tōk. Coll. Sc. J.** ..... The Journal of the College of Science, Imperial University, Japan. Tokio, Japan.  
 1887— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.i.; Glasg.P.S.i.; Linn.S.i.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.; U.C.L.  
**Tok. Un. Mém.** ..... Memoirs of the Science Department, University of Tokio, Japan. Tokio, Japan.  
 1879—85. Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.i.; R.S.; U.C.L.i.  
**Tor. Ac. Mém.** ..... Memorie della R. Accademia delle Scienze di Torino. Torino.  
 1818— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; U.C.L.i.  
*See Tor. Ac. Sc. Mém., Tor. Mém. Ac., Turin Ac. Mém. and Turin Mém. Ac.*  
**Tor. Ac. Sc. At.** ..... Atti della R. Accademia delle Scienze di Torino. Torino.  
 1865— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.i.; R.A.S.; R.S.; U.C.L.i.  
*See Tor. At. Ac. Sc.*  
**Tor. Ac. Sc. Mém.** ..... *See Tor. Ac. Mém.*

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- Tor. At. Ac. Sc.** ..... See **Tor. Ac. Sc. At.**
- Tor. Lav. Sc. Fis. Mt.** ... Notizia storica dei lavori fatti dalla Classe di Scienze Fisiche e Matematiche della R. Accademia delle Scienze negli anni 1864—65. Torino. 1869. Linn.S.; R.A.S.; R.S.
- Tor. Mm. Ac.** ..... See **Tor. Ac. Mm.**
- Tortolini A.** ..... Annali di Scienze, Matematiche, e Fisiche; Tortolini. Roma. 1850—57. B.M.; Camb.U.i.; Dub.R.D.S.; Dub.T.C.; Edinb.U.; Glasg.U.i.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.
- ..... See **A. Mt.**
- Toul. Ac. Sc. Bil.** ..... Bulletin de l'Académie des Sciences, Inscriptions et Belles-lettres de Toulouse. Toulouse. 1898—99. Dub.R.I.A.; Edinb.R.S.; N.H.M.; R.S.
- Toul. Ac. Sc. Mm.** ..... Mémoires de l'Académie des Sciences, Inscriptions et Belles-Lettres de Toulouse. Toulouse. 1782— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.
- ..... See **Toul. Mm. Ac. and Toul. Mm. Ac. Sc.**
- Toul. Fac. Sc. A.** ..... Annales de la Faculté des Sciences de Toulouse pour les Sciences Mathématiques et les Sciences Physiques. Paris. 1887— Camb.P.S.; Camb.U.; Edinb.R.S.; Math.S.; Oxon.R.; R.S.
- Toul. Mm. Ac.** ..... } See **Toul. Ac. Sc. Mm.**
- Toul. Mm. Ac. Sc.** ..... }
- Toul. Obs. A.** ..... Annales de l'Observatoire Astronomique, Magnétique et Météorologique de Toulouse. Paris. 1880— B.M.; Edinb.R.S.; Math.S.i.; R.A.S.; R.S.
- Toul. S. H. Mt. Bil.** ..... Bulletin de la Société d'Histoire Naturelle de Toulouse. Toulouse. 1867— N.H.M.
- Ts. Mth.** ..... Tidsskrift for Mathematik. Kjøbenhavn. 1859—69. B.M.; Camb.U.; Math.S.i.; Oxon.B.
- Ts. Mt. Pys.** ..... Tidsskrift för Matematik och Fysik, tillägnad den Svenska Elementar-Undervisningen. Upsala. 1868—74. B.M.; R.S.i.
- Turin Ac. Mm.** ..... } Mémoires de l'Académie Royale des Sciences de Turin. Turin.
- Turin Mm. Ac.** ..... } 1784—1816. B.M.; Dub.R.I.A.i.; Edinb.R.S.; Linn.S.; Oxon.B.; P.O.; R.A.S.; R.S.; U.C.L.
- ..... See **Tor. Ac. Mm.**
- Un. Serv. I. J.** ..... Journal of the Royal United Service Institution. London. 1858— B.M.; Camb.U.; Dub.N.L.I.i.; Edinb.U.; Oxon.B.i.; P.O.; R.S.
- Ups. Årak.** ..... Upsala Universitetets Årsskrift. Upsala. 1861— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.
- Ups. N. Acta S. Sc.** ..... } Nova Acta Regiæ Societatis Scientiarum Upsaliensis. Upsalæ.
- Ups. S. Sc. N. Acta** ..... } 1773— B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; R.A.S.i.; R.S.i.; U.C.L.i.
- Ups. Vet. S. Årak.** ..... Årsskrift utgifven af Kongl. Vetenskaps-Societeten i Upsala. Upsala. 1860—61. B.M.; Camb.U.; Edinb.R.S.; N.H.M.; R.S.
- U. S. Coast Sv. Rp.** ..... Reports of the Superintendent of the Coast Survey, showing the Progress of the Survey from year to year. Washington. 1851— Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; N.H.M.; R.A.S.; R.S.; U.C.L.i.
- Utr. A. Ac.** ..... Annales Academiæ Rheno-Trajectinæ. Trajectiad Rhenum. (Utrecht.) 1815—37. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.i.
- Utr. Aant. Frv. Gn.** ..... Aanteekeningen van het Verhandelde in de Sectie-Vergaderingen van het Provinciaal Utrechtsch Genootschap van Kunsten en Wetenschappen. Utrecht. 1846— Dub.R.D.S.; Edinb.R.S.; R.S.
- Vars. S. Mt. Tr. (C. R., Ps. C.)** ..... Travaux de la Société des Naturalistes de Varsovie. Comptes Rendus de la Section de physique et de chimie. Varsovie. [In Russian.] 1889— Math.S.; N.H.M.
- Vars. S. Mt. Tr. (Mm.)** ... Travaux de la Société des Naturalistes de Varsovie. Mémoires. Varsovie. [In Russian.] 1891—96. Math.S.; N.H.M.

## List of Serial Publications

- Ven. At.**..... Atti delle Adunanze dell' I. R. Istituto Veneto di Scienze, Lettere, ed Arti. Venezia.  
1841— B.M.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.i.; R.S.i.
- Ven. Aten.** ..... L'Ateneo Veneto: Rivista mensile di Scienze, Lettere ed Arti. Venezia.  
1881?— Dub.R.D.S.i.; R.S.i.
- Ven. Aten. At.** ..... Atti dell' Ateneo Veneto. Venezia.  
1864— Dub.R.D.S.; R.S.i.
- Ven. Aten. Esercit.** ..... Esercitazioni Scientifiche e Letterarie dell' Ateneo di Venezia. Venezia.  
1837—60. B.M.i.; Dub.T.C.i.; Oxon. B.i.; R.S.i.  
*See Ven. Esercit. Aten.*
- Ven. At. I.** ..... Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti. Venezia.  
**Ven. I. At.** ..... 1841— B.M.; Edinb.R.S.i.; Linn.S.i.; Math.S.i.; N.H.M.; R.S.i.
- Ven. Esercit. Aten.** ..... *See Ven. Aten. Esercit.*
- Ven. I. Mem.** ..... Memorie del Reale Istituto Veneto di Scienze, Lettere, ed Arti. Venezia.  
**Ven. Mem. I.** ..... 1843— B.M.; Camb.U.; Dub.R.I.A.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; R.S.  
Memorie di Matematica e di Fisica della Società Italiana delle Scienze. Modena e Verona.
- Verona Mem. S. It.** ..... 1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.  
*See Mod. Mem. S. It. and Mem. S. It. Mem.*
- Vict. R. S. F.** ..... Proceedings of the Royal Society of Victoria. Melbourne.  
1889— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C. Edinb.R.S.; Edinb.U.; Glasg.P.S.; N.H.M.; Oxon.B.; Oxon.R. P.O.; R.S.; U.C.L.i.
- Vict. R. S. T.** ..... Transactions and Proceedings of the Royal Society of Victoria. Melbourne.  
1861— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.  
*See Vict. T. R. S.*
- Vict. T. Ph. I.** ..... Transactions of the Philosophical Institute (afterwards Royal Society) of Victoria. Melbourne.  
1855—60. B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.; Glasg. P.S.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.
- Vict. T. R. S.** ..... *See Vict. R. S. T.*
- V. Nostr. Eng. Mg.** ..... Van Nostrand's Engineering Magazine. New York.  
1869—85. B.M.; P.O.; R.S.i.
- Voigt Mg.**..... Magazin für den neuesten Zustand der Naturkunden, mit Rücksicht auf die dazu gehörigen Hilfswissenschaften; Voigt. Jena und Weimar.  
1797—1806. B.M.; Camb.U.; N.H.M.; R.S.
- Wash. Nat. Ac. Mem.**..... Memoirs of the National Academy of Sciences. Washington.  
1866— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; U.C.L.i.
- Wash. Ph. S. Bul.** ..... Bulletin of the Philosophical Society of Washington. Washington.  
1874— B.M.; Camb.P.S.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.
- W. Eng. J.** ..... The West of England Journal of Science and Literature. Bristol.  
1835—36. B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; P.O.
- Westf. Vr. Jhr.** ..... Jahres-Bericht des Westfälischen Provinzialvereins für Wissenschaft und Kunst. Münster.  
1873— N.H.M.
- Wet. Gs. Jhr.** ..... Jahresbericht der Wetterauischen Gesellschaft für die gesammte Naturkunde. Hanau.  
1843— Dub.R.I.A.; R.S.i.
- Wlad. Mt.**..... Wiadomości Matematyczne. Warsaw.  
1897— Camb.P.S.; Math.S.
- Wien Ak. D.**..... Denkschriften der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe. Wien.  
1850— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Linn.S.; N.H.M.; Oxon.B.(R); P.O.i.; R.A.S.; R.S.; U.C.L.i.  
*See Wien D.*

## List of Serial Publications

- Wien Ak. Sb.** ..... Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften. Wien.  
1848— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.I.A.;  
Dub.T.C.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.;  
Oxon.R.; P.O.i.; R.A.S.i.; R.S.; U.C.L.i.  
*See Wien SB. and Wien Sb.*
- Wien Alm.** ..... Almanach der Kaiserlichen Akademie der Wissenschaften. Wien.  
1851— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.i.;  
Oxon.B.; P.O.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- Wien An.** ..... Anzeiger der Kaiserlichen Akademie der Wissenschaften: Math.-  
Naturwiss. Classe. Wien.  
1864— Camb.U.; Linn.S.; N.H.M.; Oxon.B.; R.S.i.
- Wien Berg-Hm. Jb.** ..... Berg- und Hüttenmännisches Jahrbuch der k. k. Schemnitzer  
Bergakademie und der k. k. Montan-Lehranstalten zu Leoben  
und Pibram; Gustav Fallner. Wien.  
1851— B.M.i.; P.O.i.
- Wien D.** ..... *See Wien Ak. D.*
- Wien Jb. Pol. L.** ..... Jahrbuch des k. k. Polytechnischen Instituts in Wien; Prechtl.  
Wien.  
1819—39. B.M.; Camb.U.; Oxon.B.; P.O.
- Wien Jbr. Ober-Realsch.  
Inn. Stadt** ..... Jahresbericht der öffentlichen Ober-Realschule in der innern Stadt.  
Wien.  
1859—63.
- Wien Met. Z.** ..... Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie. Wien.  
1866—85. Dub.R.D.S.; Edinb.R.S.; P.O.; R.S.
- Wien Mt. Gg. Gs.** ..... Mittheilungen der k. k. Geographischen Gesellschaft. Wien.  
1857— B.M.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.; Oxon.B.; R.S.
- Wien SB.** ..... } *See Wien Ak. Sb.*  
**Wien Sb.** ..... }
- Wisc. Ac. T.** ..... Transactions of the Wisconsin Academy of Sciences, Arts and  
Letters. Madison.  
1872— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; N.H.M.;  
Oxon.R.i.; P.O.i.; R.S.
- Würtb. Jh.** ..... Jahreshefte des Vereins für vaterländische Naturkunde in Württem-  
berg. Stuttgart.  
1845— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.T.C.i.; Linn.S.i.;  
N.H.M.; R.S.
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- Languages and mathematics in state schools of modern Germany. *Baumann*, H. Educ. Times 37 (1884) 98-.
- Leibnitz, calculus of, and its teaching. *Arnoux*, R. As. Fr. C. B. (1900) (Pt. 2) 1089-.
- Mathematical history, 8 years of teaching. *Favaro*, A. Bb. Mth. (1887) 49-.
- , —, lectures in Moscow University, programme of course. *Bobynin*, V. V. Fschr. Mth. (1890) 87; Bb. Mth. (1891) 79-.
- , — at Munich. *Steinschneider*, M. Bb. Mth. (1897) 113-.
- , —, university course. *Eneström*, G. Bb. Mth. (1890) 1-.
- instruction in France. *Pierpont*, J. N. Y. Am. Mth. S. Bll. 6 (1900) 225-.
- problems, and the development of mathematics. *Hilbert*, D. Ens. Mth. 2 (1900) 349-.
- teaching. *Hudson*, W. H. H. Educ. Times 46 (1893) 135-.
- , —. *Biraben*, F. Arg. S. Ci. A. 48 (1899) 106-, 156-.
- , —. *Duclaux*, E. Rv. Sc. 11 (1899) 353-.
- , —. *Garcia de Galdeano*, Z. As. Fr. C. R. (1900) (Pt. 2) 1052-.
- , —. *Perry*, J. Nt. 62 (1900) 317-.
- , —. *Heaviside*, O. Nt. 62 (1900) 548-.
- , —, changes. *Piola*, G. (viii) [1840] Bb. It. 2 (1841) 159-.
- , —, curiosities in early English. *Heppel*, G. Educ. Times 38 (1885) 145-.
- , —, elementary. *Laisant*, —. Rv. Sc. 11 (1899) 358-.
- , —, general principles. *Galdeano*, Z. G. de. Ens. Mth. 1 (1899) 195-.
- , — at German Universities, especially Göttingen. *Fano*, G. Rv. Mt. 4 (1894) 170-.
- , — in Germany, history. *Günther*, S. Ens. Mth. 2 (1900) 287-.
- , — in higher grade schools (gymnasiums and lyceums). *Catania*, S. Rv. Mt. 5 (1895) 83-.
- , — Holland. *Cardinaal*, J. Ens. Mth. 2 (1900) 317-.
- , —, methods. *Grunert*, J. A. Arch. Mth. Ps. 42 (1864) 348-.
- , — in preparation for the "École Polytechnique." *Laurent*, H. Ens. Mth. 1 (1899) 88-.

**Institutions 0060**

- 0060 Institutions.**

**Franklin Institute during 75 years. Thurston, R. H. Franklin I. J. 149 (1900) 81-.**

## 0070 Nomenclature.

- "Al-djebr," exact meaning of word. *Vaux, C. de.* Bb. Mth. (1897) 1-.
- Algorithm, meaning of term. *Hunrath, K.* Bb. Mth. (1887) 70.
- Antiparallels. *Langley, E. M.* Nt. 40 (1889) 460-.
- "Autotomic" curves. *Basset, A. B.* Nt. 62 (1900) 572.
- — — *Orchard, H. L.* [1900] Nt. 63 (1900-01) 7.
- — — *Thorn, A. S.* [1900] Nt. 63 (1900-01) 7.
- — — *Basset, A. B.* [1900] Nt. 63 (1900-01) 82.
- Chinese arithmetical notation. *Edkins, —.* Nt. 37 (1888) 65.
- "Conjugate angles," new geometrical term. *Worthington, A. M.* Nt. 47 (1892-93) 8.
- Cuneiform numerical signs, transmission. *Boynin, V.* Bb. Mth. (1893) 18-.
- Curves without double points. *Richmond, H.* [1900] Nt. 63 (1900-01) 58.
- Decimal division of circle (i.e. of right angle). *Hatzfeld, A.* Rv. Sc. 48 (1891) 655-.
- Determinant notation. *Nanson, E. J.* Ph. Mg. 44 (1897) 396-.
- Differential notation and teaching. *Poincaré, H.* Ens. Mth. 1 (1899) 106-.
- Duodecimal system. *Heaviside, O.* Elect. 37 (1896) 489.
- Functions, growth of notation for. *Eneström, G.* Bb. Mth. (1891) 89-.
- General and logico-mathematical notation. *Oliver, J. E. A.* Mth. 4 (1888) 186-.
- Geometrical square, nomenclature. *Weissenborn, H.* Bb. Mth. (1888) 87.
- Geometrography or systematic notation for geometric constructions. *Lemoine, E. G.* Teix. J. Sc. 12 (1895) 114-.
- Gnomon theorem (Euc. I. 48). *Allman, G. J.* Bb. Mth. (1887) 22.
- Kardaga. *Steinschneider, M.* Bb. Mth. (1891) 114.
- Language, mathematical and scientific. *Anon.* (v. 543). *Gergonne* A. Mth. 12 (1821-22) 822-.
- Logarithms, notation. *Draenert, —.* D. Nf. Tbl. (\* 1876) (Suppl.) 173-.
- Nomenclature. *Dantas Pereira, J. M.* Lisb. Mm. Ac. Sc. 10 (1830) (pte. 2) 197-.
- , geometrical. *Fontenè, G.* Ens. Mth. 2 (1900) 134-.
- of metric system. *Rautenfeld-Lindenruh, H. von.* Riga Cor.-Bl. 38 (1895) 85.
- Notation. *Lubbock, J. W.* [1829] As. S. Mm. 4 (1831) 471-.
- *Sylvester, J. J.* Ph. Mg. 7 (1854) 50-.
- *Houzeau, J. C.* Brux. Ac. Bl. 39 (1875) 487-.
- , algebraic. *Jarrett, T.* [1827] Camb. Ph. S. T. 3 (1830) 65-.
- , —. *Collins, J. V.* Science 20 (1892) 359.
- Notation, arithmetical. *McColl, H.* Educ. Times 33 (\* 1880) 111.
- , calculus. *Couto, M. V. do, & Simões Margiochi, F.* Lisb. Mm. Ac. Sc. 3 (pte. 2) (1814) 48-.
- of decimal fractions. *Gravelaar, N. L. W. A.* N. Arch. Wisk. 4 (1899) 54-; Fschr. Mth. (1899) 37.
- , numerical. *Prevost, P.* Bb. Un. 3 (1816) 306-.
- , questions concerning. *Ripert, L.* Ens. Mth. 1 (1899) 139.
- useful in analysis. *Ocagne, M. d'.* Par. S. Mth. Bl. 15 (1887) 156-.
- \* to denote 3·14159..., first use. *Eneström, G.* Bb. Mth. (1889) 28.
- — — — — *Ball, W. W. R.* Bb. Mth. (1894) 106.
- Printing mathematical symbols. *Mitchell, C. T., and others.* Elect. 29 (1892) 652, et seq.
- — — *Thompson, S. P.* Nt. 46 (1892) 513.
- mathematics. *Cassie, W.* [1892] Nt. 47 (1892-93) 8-.
- — — *Jackson, M. J.* Nt. 47 (1892-93) 227.
- Quantitative comparisons, a common error in speech. *Johnson, G. H.* Science 22 (1893) 352.
- Roulettes. *Willson, F. N.* Am. As. P. (1887) 59-.
- Signs (for functions, operations, &c.). *Hoppe, R.* Arch. Mth. Ps. 61 (1877) 323-.
- Spoken numeration, from international point of view. *Berdellé, C.* Ens. Mth. 1 (1899) 269-.
- Symbols. *Hall, A.* [1899] A. Mth. 5 (1899-90) 19.
- of non-existence. *Doolittle, M. H.* Wash. Ph. S. Bl. 11 (1892) 603.
- Terminology. *Laisant, C. A.* Ens. Mth. 1 (1899) 22-.
- and conceptions. *Györy, S.* (xii) Mag. Tud. Ak. Éts. 8 (No. 12) (1899) 131-.
- , mathematical. *Roberts, S.* [1882] L. Mth. S. P. 14 (1882-83) 5-.
- , suggestions. *Muirhead, R. F.* Edinb. Mth. S. P. 13 (1895) 143.
- Trigonometry, development of notation. *Braunmühl, A. von.* Bb. Mth. 1 (1900) 64-.
- Umbral notation. *Harley, (Rev.) R. B. A.* Rp. (1887) 600-.
- Uniform notation for mathematical and physical quantities. *Winkler, E., & Keck, —.* Civing. 30 (1884) 285-.
- — — — — *Keck, —.* Hann. Arch.-Vr. Z. 30 (1884) 285-.
- Use of + and - to denote "plus" and "minus." *Eneström, G.* Stockh. Ötv. (1894) 243-; Fschr. Mth. (1893-94) 59-; Bb. Mth. (1899) 105-.
- terms "square" and "cube" in Algebra. *Taylor, W. B.* Wash. Ph. S. Bl. 11 (1892) 590-.
- Variation, variable, &c., remarks on the words. *Strauch, G. W.* Grunert Arch. 7 (1846) 221-.



# 0080 Instruments, including Calculating Machines. Models.

## INSTRUMENTS.

- Algebraical machines. *Torres, L.* As. Fr. C. R. (1895) (Pt. 2) 90-.
- Angle, correction for tilt of horizontal circle. *Matzka, W.* Grunert Arch. 13 (1849) 118-.
- , instrument for dividing into equal parts. *Gouin, E.* Les Mondes 12 (1866) 470-.
- measurer. *Heineken, N. J.* Intell. Obs. 8 (1886) 197-.
- for schools. *Fischer, F. W.* [1876] Arch. Mth. Ps. 61 (1877) 99-.
- , mechanical division. *Perrin, R.* [1875] Par. S. Mth. Bll. 4 (1876) 85-.
- , —. *Brocard, H.* [1876] Par. S. Mth. Bll. 5 (1877) 43-.
- Antigraph, a reversing drawing instrument. *Marcus, S.* Wien SB. 17 (1855) 282-.
- Aros, instrument for drawing. *Alderson, Jas.* Gill Tech. Rep. 10 (1829) 128-.
- Area, moment of inertia, and centre of gravity of a plane area, apparatus for giving. *Colignon, É.* (ix) A. Pon. Chauss. 3 (1872) 223-.
- Arithmoplanimeter. *Lalanne, L.* Par. A. Pon. Chauss. 20 (1840) 3-.
- Axonometric drawing, protractors for, preparation. *Anon.* (vi 316) Civing. 7 (1861) 83-.
- Besson, Jacques, (†1589), (Mathematical instruments). *Beck, T.* Civing. 36 (1890) 191-.
- Calculating machine. Cung's "machine à débits," for calculating quantity of water flowing through an orifice. *Sornin, J.* Toul. Mm. Ac. 6 (1856) 346-.
- Caloulimeter (sort of slide rule). *Fenton, J. J.* Vict. R. S. P. 2 (1890) 84-.
- Chinese abacus or souan-pan. *Rodet, L.* Par. S. Mth. Bll. 8 (1880) 158-.
- Circles, instrument for dividing on paper. *Balfour, J. M.* (vi Adds.) [1859] Edinb. T. Sc. S. Arts 5 (1861) 149-.
- with remote centres, construction. *Fischer, E.* Dingler 294 (1894) 133-.
- Circular arcs, instrument for use of mechanicians for comparison of. *Sipos, P.* (vi Adds.). Berl. Sm. D. Ab. 2 (1796) 201-.
- Compass, bicentric. *Maze (l'abbé) C.* Les Mondes 8 (1884) 708-.
- for drawing spirals. *Hartung, A.* Dingler 266 (1887) 12-.
- , elliptic, new. *Jost, K.* Wien Ak. Sb. 95 (1887) (Ab. 2) 251-.
- , hyperbolic. *Reichelt, K. F.* Cztg. Opt. 17 (1896) 208.
- Compasses, copying —, a simple form of pantograph. *Sedlacek, J.* Wien SB. 16 (1855) 180-.
- , elliptic. *Burchard, L.* Carl Rpm. 18 (1877) 528-.
- , improvement. *Möllinger, O.* Sch. Gs. Vh. (1850) 52-.
- , proportional. *Narrien, J.* Thomson A. Ph. 8 (1816) 338-.

- Compasses, proportional. *Butkevich, F. S.* (xii) [1878] Mosc. S. So. Bll. 39 (No. 2) (1880) 128-.
- , —. *Palacios, D.* Méx. S. "Alzate" Mm. 7 (1898) 193-.
- , trisecting, Laisant. *Brocard, H.* Par. S. Mth. Bll. 3 (1875) 47-.
- Conic section compass. *Meyn, R.* Civing. 8 (1862) 247-.
- compasses. *Frizell, J. P.* Camb. (M.) Mth. M. 1 (1859) 262-.
- —, Drzewiecki's for direct construction of conics with mathematical pen. *Kuhn, M.* Carl Rpm. 10 (1874) 420-.
- sections, instrument for drawing. *Rebiček, G.* Carl Rpm. 11 (1875) 64-.
- Curve description; kinograph. *Engelmeier, P. K.* [1886-89] Mosc. S. So. Bll. 65 (No. 1) (1890) 89-.
- for drawing curves (elastic lamina) "tira-curve-opisometer." *Rossi Re, V. de.* Rm. N. Linc. At. 33 (1880) 232-.
- tracer. *Pirani, E.* Arch. Mth. Ps. 1 (1884) 113-.
- and root finder. *Bashforth, F. B. A.* Bp. (1845) (pt. 2) 3-.
- tracing apparatus. *Cayley, A. L.* Mth. S. P. 4 (1871-73) 345-.
- , designing of apparatus for. *Thallmayer, V.* Carl Rpm. 14 (1878) 713-.
- machine. *Decheverens, M.* C. R. 130 (1900) 1616-.
- , mechanical. *Jessop, C. M.* QJ. Mth. 22 (1887) 151-.
- Curves described by Jopling's apparatus, nature. *Tredgold, T.* Tilloch Ph. Mg. 62 (1823) 211-.
- , mechanical description. *Russell, W. H. L.* [1869] R. S. P. 18 (1870) 72-.
- Curvimeter (for finding length of curves). *Crane, W. R.* Kan. Un. Q. 4 (1896) 121-.
- Cycloids, description. *Kracht, H.* Dingler 289 (1893) 108-.
- Descriptive geometry, apparatus for illustrating. *Hosa, F.* Arch. Mth. Ps. 53 (1871) 188-.
- , — teaching. *Weissand, —.* N. A. Mth. 14 (1855) 47-.
- Diagonal scale principle applied to angular measurement in circular slide-rule. *Campbell, J. R.* L. Mth. S. P. 6 (1875) 73-.
- Diagrammometer, cypher. *Koslov, V. S.* Ra. Ps.-C. S. J. 23 (Ps.) (1891) 180-; C. R. 111 (1890) 166-.
- Difference engine, new. *Grant, G. B.* Am. J. Sc. 2 (1871) 113-.
- Division of angles and aros of circles. *Murphy, I. J.* Belfast NH. S. Rp. & P. (1892-98) 47-.
- straight line into equal parts, machine for. *Soave, F.* Verona Mm. S. It. 8 (1799) 56-.
- toothed wheels, machine for. *Glasser, A. von.* Dingler 252 (1884) 56-.
- Drawing instruments, especially ellipsographs in theory and practice. *Fischer, E.* Dingler 255 (1885) 188-, 217-, 261-.
- Egg-oval, perfect, machine for drawing; and advantageous method of producing curvilinear figures. *Hay, D. R.* Edinb. N. Ph. J. 40 (1846) 331-.

- Ellipses, paradox in tracing. *Lametz*, —. *Metz* Ac. Mm. 79 (1900) 69-.
- Ellipsograph. *Léninn*, M. St Pét. Ac. So. Bll. 5 (1839) 877-.
- *Thallmayer*, V. *Dingler* 226 (1877) 237-; 227 (1878) 337-.
- *Sidersky*, D. *Arch. Mth. Ps.* 65 (1880) 420-.
- *Hendricks*, J. E. *Des Moines Anal.* 10 (1883) 161-.
- *Grant*, G. B. *Franklin I. J.* 122 (1886) 301.
- *Schroamm*, F. *Z. Instk.* 12 (1892) 139-.
- *Delone*, N. *Mosc. S. Sc. Bll.* 83 (No. 2) (1894) 11-; *Fachr. Ps.* (1895) (Ab. 1) 351.
- *Riesler*, C. *Z. Instk.* 16 (1896) 115-.
- of Proclus. *Blake*, E. M. [1898] *Am. J. Mth.* 22 (1900) 146-.
- and protractor. *Burnham*, S. W. *Pop. As.* 4 (1897) 181-, 336.
- Ellipsographs. *Zistl*, M. *Cztg. Opt.* 5 (1884) 245-, 258-, 265-.
- *Hartmann*, W. *Z. Instk.* 11 (1891) 285-.
- Ellipsometer. *Henry*, F. (x) *A. Pon. Chauss.* 3 (1872) 459-.
- *Jannettaz*, E. *Fr. S. Mn. Bll.* 15 (1892) 237-; 16 (1893) 205-.
- Elliptographs, and a mechanical rocker for detecting oscillations. *Alexander*, T., & *Thomson*, A. W. *Ir. Ac. T.* 29 (1887-92) 673-.
- Epi- and hypo-cycloids, apparatus for tracing. *Thallmayer*, V. *Dingler* 228 (1878) 312-.
- Equations, apparatus for graphic solution. *Lill*, E. *Les Mondes* 16 (1868) 325-.
- of form  $\lambda^3 + a\lambda^2 + b\lambda + c = 0$ , *Mehmke's* apparatus for solution. *Mlodzievskij*, B. K. *Mosc. S. Sc. Bll.* 92 (No. 1) (1896) 36-; *Fachr. Mth.* (1896) 72.
- with imaginary roots, apparatus for graphic solution. *Lill*, E. *N. A. Mth.* 7 (1868) 363-.
- , machine for solution. *Girard*, P. von. *Wien Jb. Pol. I.* 14 (1829) 62-.
- — — *Bashforth*, F. *B. A. Rp.* (1845) (pt. 2) 3-.
- — — *Boys*, C. V. *L. Ps. S. P.* 7 (1886) 355-; *Ph. Mg.* 21 (1886) 241-.
- — — *Cunynghame*, H. *L. Ps. S. P.* 7 (1886) 360-; *Ph. Mg.* 21 (1886) 260-.
- — — *Ocagne*, M. d'. *J. de Ps.* 5 (1896) 310-.
- — — *Meslin*, G. *C. R.* 130 (1900) 888-.
- — — of linear. *Veltmann*, W. *Z. Instk.* 4 (1884) 338-.
- — — simultaneous linear. *Thomson*, (Sir) W. (*Lord Kelvin*). [1878] *R. S. P.* 28 (1879) 111-.
- — — transcendental. *Herschel* (Sir) J. F. W. [1832] *Camb. Ph. S. T.* 4 (1833) 425-.
- , mechanical solution. *Kempe*, A. B. [1872] *Mess. Mth.* 2 (1873) 51-.
- — — *Guarducci*, F. *Rm. R. Ac. Linc. Mm.* 7 (1891) 219-.
- , 3rd order, mechanical solution by a quadrilateral linkage. *Greenhill*, A. G. *Mess. Mth.* 5 (1876) 162-.

- Equations, 3rd order, solution by slide-rule. *Bour*, E. [*J. E. E.*] *C. R.* 44 (1857) 22-.
- , 4th and 5th orders, solution by moving mechanisms. *Ameseder*, A. *Wien Ak. Sb.* 93 (1886) (Ab. 2) 380-.
- to 7th order, machine for solution. *Lalanne*, L. *C. R.* 11 (1840) 859-.
- — — — — (Lalanne). *Cauchy*, A. L. *C. R.* 11 (1840) 959-.
- Generation of orthogonal projections of plane curves, mechanical. *Delaunay*, N. *Z. Mth. Ps.* 40 (1895) 242-.
- Genesis of quantity demonstrated by means of two mechanical instruments. *Araldi*, (*Capitano*) A. (vii) [1829] *Mod. Mm. Ac. Sc.* 1 (1858) (pte. 4) 90-.
- Geometrical drawing, apparatus for. *Zmurko*, W. [L.] (xii) *Kosmos* (Lw.) 5 (1880) 44-.
- Geometrography applied to different solutions of a problem. *Lemoine*, E. *Par. S. Mth. Bll.* 20 (1892) 132-.
- Harmonic analyser. *Henrici*, O. [1894] *L. Ps. S. P.* 13 (1895) 77-; *Ph. Mg.* 38 (1894) 110-.
- *LeConte*, J. N. *Ps. Rv.* 7 (1898) 27-.
- *Michelson*, A. A. & *Stratton*, S. W. *Am. J. Sc.* 5 (1898) 1-.
- — for graphic determination of coefficients in Fourier series. *Berry*, N. *Mosc. Obs. A.* 3 (Pt. 2) (1896) 109-.
- — *Henrici* and *Coradi's*. *Grabowski*, L. *Wlad. Mt.* 4 (1900) 236-.
- —, reading amplitude and epoch directly. *Sharp*, A. [1894] *L. Ps. S. P.* 13 (1895) 89-; *Ph. Mg.* 38 (1894) 121-.
- —, remarks on *Henrici's*. *Perry*, J. [1894] *L. Ps. S. P.* 13 (1895) 97-; *Ph. Mg.* 38 (1894) 125-.
- —, simple form. *Yule*, G. U. *L. Ps. S. P.* 13 (1895) 403-; *Ph. Mg.* 39 (1895) 367-.
- Helical epicycloids, instrument for describing. *Burnaby*, S. B. *Amt. Mch. S. J.* 3 (1879) 115-, 160-, 194-, 228-.
- Herpoldhede of Poinso, and an apparatus of Darboux and Koenigs. *Gilbert*, P. *Bruz. S. Sc. A.* 14 (1890) (Pt. 2) 25-.
- Hydraulic integration of differential equations. *Petrovitch*, M. *Am. J. Mth.* 20 (1898) 298-.
- Hyperbolas, apparatus for drawing. *Thallmayer*, V. *Dingler* 228 (1878) 106-.
- , method of drawing. *Burch*, G. J. *Ph. Mg.* 41 (1896) 72-.
- — — *Burch's*. *Wadsworth*, F. L. O. *Ph. Mg.* 41 (1896) 372-.
- Hyperbolograph. *Cunynghame*, H. [1886] *L. Ps. S. P.* 8 (1887) 67-; *Ph. Mg.* 22 (1886) 138-.
- Instruments for ovals and for drawing in perspective. *B.*, R. *Nicholson* J. 9 (1804) 122-.
- Integral of product of 2 given functions, instrument for calculating. *Thomson*, (Sir) W. (*Lord Kelvin*). *R. S. P.* 24 (1876) 266-.
- Integrating differential equations of first order, *Petrovich's* apparatus. *Price*, W. A. *Ph. Mg.* 49 (1900) 487-.
- Integration, mechanical. *Abdank-Abakanowicz*, B. *C. R.* 94 (1882) 783-.

- Integration, mechanical. *Nehls, C.* Civing. 20 (1874) 71-; 21 (1875) 131-, 199-, 261-.
- , —, applied to three bodies' problem. *Ström-gren, E.* Stookh. Öfv. (1900) 443-.
- , —, of general linear differential equation of any order with variable coefficients. *Thomson, (Sir) W. (Lord Kelvin).* R. S. P. 24 (1876) 271-.
- , —, — linear differential equations of 2nd order with variable coefficients. *Thomson, (Sir) W. (Lord Kelvin).* R. S. P. 24 (1876) 269-.
- , —, — the product of two functions. *Sutherland, W.* Ph. Mg. 20 (1885) 175-; 21 (1886) 141-.
- Integrator, Amaler's. *Nehls, C.* Hann. Z. Archt. Vr. 18 (1872) 534-.
- , *Abakanowicz, B.* (xii) Krk. Ak. (Mt.-Prz.) Rz. & Sp. 7 (1880) 75-.
- , cubical, description. *McElroy, G. W.* A. Mth. 3 (1887) 105-.
- , disk-globe-and-cylinder. *Thomson, (Prof.) Jas.* R. S. P. 24 (1876) 262-.
- , instrument for graphic integration. *Abdank-Abakanowicz, B.* C. R. 92 (1881) 402-, 515-.
- , mechanical, Amaler-Laffon's. *Merrifield, C. W.* Nv. Archt. T. 21 (1880) 252-.
- , —, for areas, etc. *Deprez, M.* C. R. 73 (1871) 785-; Les Mondes 27 (1872) 10-.
- , —, —  $\int (Xdx + Ydy)$ . *Cayley, A. B. A.* Rp. (1877) (Sect.) 18-.
- , —, — work done by a force. *Fuchs, K.* Mth. Term. Éts. 13 (1895) 239-; Mth. Nt. B. Ung. 13 (1897) 144-.
- , new form. *Marinovitch, B.* Lum. Élect. 17 (1885) 529-.
- , — model. *Napoli, D. & Abdank-Abakanowicz, —.* C. R. 101 (1885) 592-.
- , *Żmurko's, Skibinski, P. K.* Kosmos (Lw.) 9 (1884) 185-; Wien Ak. D. 53 (1887) (Ab. 2) 35-.
- Integrators. *Hummel, —.* Dingler 275 (1890) 17-.
- , mechanical. *Abdank-Abakanowicz, B.* Lum. Élect. 18 (1885) 49-, 110-, 161-, 249-, 306-, 393-, 535-, 589-; 24 (1887) 3-, 54-, 161-.
- , two mechanical. *Fraser, A. Y.* Edinb. Mth. S. P. 4 (1886) 29-.
- Integrometer, new. *Abdank-Abakanowicz, B.* C. R. 95 (1882) 1047-.
- Involution and evolution of numbers, instrument for. *Roget, P. M.* [1814] Phil. Trans. (1815) 8-.
- Least squares, instrument for. *Bouniakowsky, V.* Pogg. A. 107 (1859) 463-.
- Linear differential equation of 2nd order, general mechanism for integrating. *Tait, P. G.* [1876] Edinb. B. S. P. 9 (1878) 118-.
- Link-work apparatus for describing curves. *Jamse, L.* N. Arch. Wisk. 9 (\*1882) 61-.
- Linkages for tracing conic sections. *Strong, W. M. A.* Mth. 8 (1893-94) 181-.
- $x^m$ . *Freeland, F. T.* [1879] Am. J. Mth. 3 (1880) 316-.
- Logical machine, Jevons'. *Sonnenschein, E. A.* (xi) [1888] Birm. Ph. S. P. 4 (1885) 72-.
- Logical machine, new. *Marquand, A.* Am. Ac. P. 21 (1886) 308-.
- Mathematical instruments, models etc., exhibition in Munich. *Dyck, W. D.* Mth. Vr. Jbr. 3 (1894) 39-.
- Mechanisms, new: projector, ellipseograph, . . . *Delaunay, N.* Bll. Sc. Mth. 19 (1895) 240-.
- Mensurator and celometer. *Adams, M. L.* Mth. S. P. 5 (1874) 141-.
- Military surveying circle. *Delanges, P.* Bologna Mm. I. It. 1 (pte. 2) (1806) 63-.
- Mirror for drawing in perspective. *Schönmann, P.* Z. Nw. 10 (1874) 102-.
- Multiplication by a mechanical device. *Berdelle, C.* As. Fr. C. R. (1887) (Pt. 2) 210-.
- Nautical instruments, and calculating apparatus. *Gelcich, E.* Cztg. Opt. 5 (1884) 242-, 253-, 268-, 277-; 6 (1885) 9; 7 (1886) 265-.
- Nicolas's gyograph for tracing arcs of large circles. *Gobin, A.* Lyon A. S. Ag. 8 (1864) 520-.
- Nürnberg, German Museum, mathematical collection. *Günther, S.* Lplidina. 14 (1878) 93-, 108-.
- , —, — instruments. *Günther, S. D.* Nt. Vh. (1893) (Tf. 2, Hälfte 1) 82.
- Observations, mechanical calculation of results. *Favaro, A.* Ven. I. At. 2 (1876) 559-.
- Pantograph; proof of chief theorem, etc. *Hausner, A.* Arch. Mth. Ps. 65 (1880) 334-.
- , scenographic, for projecting geometric figures. *Magistrini, G. B.* Bologna Opus. Sc. 1 (1817) 289-.
- Pantographs. *Ott, A.* Cztg. Opt. 17 (1896) 161-.
- , proof of properties ( $1^r + 2^r + 3^r + \dots + x^r$ ). *Ligowski, W.* [1879] Arch. Mth. Ps. 65 (1880) 329-.
- Parabola, apparatus for drawing. *Thallmayer, V.* Dingler 227 (1878) 430-.
- Parabolograph. *Delone, N. B.* Rs. Ps.-C. S. J. 29 (Ps.) (1897) 76.
- Parallel lines, instrument for drawing. *Nicholson, W.* Nicholson J. 2 (1799) 429-.
- , —, —. *Suverkrop, J. P.* [1885] So. S. Arts T. 11 (1887) 73-.
- rule, new. *B., R.* Nicholson J. 9 (1804) 212-.
- , —, —. *Boswell, J. W.* Nicholson J. 13 (1806) 196-.
- "Perspecteur-calquer," instrument for drawing in perspective. *Bretton, —.* Isère S. Bll. 27 (1892) 659-.
- Perspective drawer. *Brauer, E.* Z. Mth. Ps. 43 (1898) 163-.
- drawing instrument. *Brunel-Barennes, — de.* Dingler 34 (1829) 325-.
- , Verly's instrument, report. *Rodolphe, —.* Metz Mm. Ac. 20 (1838-39) 258-.
- , scale for dividing vanishing lines. *Cumberland, G.* Nicholson J. 16 (1807) 1-.
- Plagiograph aliter skew pantigraph. *Sylvester, J. J.* Nt. 12 (1875) 168.
- , history. *Sylvester, J. J.* Nt. 12 (1875) 214-.
- Plane surface, formation, law of progress of accuracy. *Airy, (Sir) G. B.* Ph. Mg. 42 (1871) 107-.

## 0080 Instruments

- Planigraph, projecting tortuous curve on plane.  
*Delone, N. B.* [1895] *Vars. S. Nt. Tr.* (1895-96) (C. R., Ps. C.) No. 2, 3 pp.  
 Planimeter. *Amaler, J.* *Zür. Vjschr.* 1 (1856) 41-, 101-.  
 —, *Amaler's. Decher, G.* *Dingler* 140 (1856) 27-; 141 (1856) 29-.  
 —, —, *Weisbach, J.* *Civing.* 4 (1853) 1-.  
 —, —, *Wittstein, T.* *Hann. Z. Archt. Vr.* 7 (1861) 289-.  
 —, —, *Petsch, —.* *A. Pon. Chaus.* 16 (1869) 124-.  
 —, —, *Combes, C. P. M. A.* *Mines* 19 (1871) 278-.  
 —, —, *Bramwell, F. J. B. A. Rp.* 42 (1872) 401-.  
 —, —, *Purvis, F. P. Ph. Mg.* 48 (1874) 11-.  
 —, —, *Rateau, A.* *As. Fr. C. R.* (1896) (Pt. 2) 130-.  
 —, —, proof of principle. *Steggall, —.* *Edinb. Mth. S. P.* 7 (1889) 25-.  
 —, —, theory. *Zhbkovskit, A. K. (xii)* [1865] *Kasan Un. Mm.* (1864, Ps.-Mth. No. 1), 219-.  
 —, —, *Aldis, W. S. N. Eng. I. Mn. E.* T. 28 (1879) 211-.  
 —, —, *Thiré, A. A. Mines* 11 (1887) 121-.  
 —, *Bouniakovsky's* and modification. *Decher, G.* *Dingler* 140 (1856) 27-.  
 —, construction. *Schultén, N. G. af. (viii)* *Helsingf. Öfv.* 5 (1863) 245-.  
 —, *Coradi's. ? Coradi, —.* *V. Nost. Eng. Mg.* 32 (1885) 465-.  
 —, *hatchet. Hill, F. W.* [1894] *L. Ps. S. P.* 13 (1895) 229-; *Ph. Mg.* 38 (1894) 265-.  
 —, history. *Favaro, A.* *Förster Al. Bauztg.* 38 (1873) 68-, 93-.  
 —, —, *Wolf, R.* *Zür. Vjschr.* 37 (1892) 111-; 38 (1893) 3-.  
 —, of *Hohmann* and *Coradi. Fischer, G.* *Cztg. Opt.* 5 (1884) 74-.  
 —, *Lippincott. Greenhill, A. G.* [1899] *So. Abs.* 3 (1900) 234.  
 —, *Maass, description. Günther, F.* *Cztg. Opt.* 7 (1886) 247-.  
 —, new. *Eckert, —, & Hamann, —.* *Cztg. Opt.* 18 (1897) 125.  
 —, —, description. *Maevskij, J. A.* [1899] *Vars. S. Nt. Tr.* (1899-90) (C. R., Ps. C.) No. 2, 7-.  
 —, — form. *Maxwell, J. C.* *Edinb. T. So. S. Arts* 4 (1856) 420-.  
 —, — (Beverley). *Balfour, J. M.* [1865] *Edinb. So. S. Arts T.* 7 (1868) 198-.  
 —, — (1852). *Baranoffsky, E.* *Helsingf. Acta* 4 (1856) 3-.  
 —, — (1855). *Bouniakowsky, V.* [1855] *St Pét. Ac. Sc. Bll.* 14 (1856) 152-.  
 —, polar. *Amaler, J.* *Dingler* 140 (1856) 321-; 141 (1856) 326-.  
 —, —, *Amaler's. Decher, G.* *Dingler* 141 (1856) 330-.  
 —, —, *Schinz, E.* *Bern Mt.* (1857) 152-.  
 —, —, *Nehls, C.* *Civing.* 20 (1874) 71-.  
 —, —, results. *Hartogh Heys van Zou- teven, H.* *Arch. Néerl.* 5 (1870) 440-.

## Instruments 0080

- Planimeter, polar, determination of constant.  
*Schell, A.* *Wien SB.* 56 (1867) (Ab. 2) 325-.  
 —, —, general theory. *Schell, A.* *Wien SB.* 58 (1868) (Ab. 2) 189-; *Carl Rpm.* 11 (1875) 406-.  
 —, —, note. *Resal, H.* *C. R.* 77 (1873) 509-.  
 —, *Richard. ? Anon. So. Abs.* 1 (1898) 635.  
 —, rolling, theory. *Fenner, P.* *Cztg. Opt.* 7 (1886) 133-.  
 —, solutions of electric problems. *Atkinson, L. B. Elect.* 22 (1889) 702-; 23 (1889) 29-.  
 —, *Trunk's. Hübner, A.* *Arch. Mth. Ps.* 44 (1865) 337-.  
 —, *Wetli's. Stampfer, S.* *Wien SB.* (1850) (Ab. 1) 184-.  
 Planimeters. *Moberg, A. (viii)* [1859] *Helsingf. Öfv.* 5 (1863) 53-.  
 —, *Beck, A.* *Riga Cor.-Bl.* 40 (1898) 99-.  
 —, free. *Bouniakowsky, V.* *St Pét. Ac. Sc. Bll.* 2 (1860) 567-.  
 — and similar instruments. *Kohlmorgen, O.* *Westf. Vr. Jbr.* (1890) 126-.  
 — of *Wetli, Decher, and Amaler. Müller, W. H. Ph. Mg.* 16 (1858) 230-.  
 Problems of 3rd degree, instrument for solution. *Simon, C.* *Les Mondes* 4 (1864) 547-.  
 Proportion-table, equivalent to sliding-rule 13' 4" long. *Everett, J. D. Ph. Mg.* 32 (1866) 350-.  
 Protractor, semicircular, improved form. *Stewart, J. N. Z. I. T.* 3 (1870) 316-.  
 — for trisection angles. *Alexander, J. H. Silliman J.* 7 (1849) 248-.  
 Quadrature, instrument for. *Boileau, P. C. R.* 15 (1842) 594-.  
 Refraction through prism; apparatus to illustrate deviation of ray. *Marcucci, S. Rv. Sc.-Ind.* 27 (1895) 101-.  
 Scale, accuracy of, and limit of perception. *Neovius, E.* *Helsingf. Öfv.* 23 (1881) 71-.  
 "Scoliograph, unicursal," for drawing algebraic curves. *Boguslawsky, A.* [1881] *Mosc. S. Nt. Bll.* 57 (1882) (Pt. 2) 72-.  
 Screw, use in mathematical instruments. *Carl, P.* *Carl Rpm.* 2 (1867) 37-.  
 Sectograph (for dividing lines and angles, &c.). *Jones, T.* *Tilloch Ph. Mg.* 42 (1813) 401-.  
 Sine and cosine quadrant. *Schreiber, C.* *Cztg. Opt.* 7 (1886) 88-.  
 Spherical integrator, modification of a form of. *Smith, F. J. Ph. Mg.* 22 (1886) 147-.  
 — triangles, instrument for determining, by mechanical action. *Penrose, F. C. As. S. M. Not.* 36 (1876) 281-.  
 Spherometer. *Mayer, A. M. Am. J. Sc.* 32 (1886) 61-.  
 —, new. *Krüß, H.* *Cztg. Opt.* 12 (1891) 63-.  
 Spirals, Johnson's volutor for drawing. *Booth, J. B. A. Rp.* (1860) (Pt. 2) 60-.  
 Square with parallel lines. *Chaussonet, (l'Atne).* *Par. Bll. S. Enour.* 43 (1844) 4-.  
 Stanhope logical and arithmetical machine. *Harley, (Rev.) R. N. S. W. R. S. J.* 24 (1890) 121-.

## 0080 Calculating Machines

- Stereoscopic drawing apparatus. *Jensen, J.* [1870] Arch. f. Ap. 4 (1871) 238-.
- Straight line apparatus, *Hart's. Darboux, G.* Bl. Sc. Mth. As. 8 (1879) 144-.
- Stupakoff's comparometer. *Basford, G. M.* Am. Eng. & Railroad J. 73 (1899) 59, 169.
- Tachymeter, *Cairo's. Puissant, L. C. R.* 8 (1836) 140, 200, 245-, 384.
- Tractograph (instrument for describing curves of "tractory" nature). *Kleritj, L.* Dingler 305 (1897) 234-, 260-.
- of Kleritj, and rod-planimeter. *Korselt, A.* Z. Mth. Ps. 43 (1898) 312-.
- Trigonometer, instrument for solving spherical triangles. *Braun, K. (xii)* Mth. Term. Éts. 1 (1883) 313-; Mth. Nt. B. Ung. 1 (1882-83) 283-.
- , *Savy's. Le Grand, G.* Aube Mm. S. Ag. 5 (1854) 235-.
- Trisection of angle, instrument for. *Burt, T. S.* Beng. As. S. J. 1 (1832) 499-.
- — — — — *Tate, T.* Ph. Mg. 19 (1860) 261-.
- — — — — *Cassani, P.* Ven. Aten. At. 1 (1878) 163-.
- — — — — *Longchamps, G. de.* As. Fr. C. R. (1893) (Pt. 2) 190-.
- — — — — mechanical. *Russell, A. H.* Nt. 43 (1891) 547-.
- — — — — angles, test. *Rönisch, A.* Czgt. Opt. 16 (1895) 253-.
- Vernier for line or curve with unequal divisions. *Artur, J. F.* Par. Bl. S. Encour. 50 (1851) 676-.
- , new form. *Ludlow, H. H.* V. Nost. Eng. Mg. 27 (1882) 196.
- or Nonius, priority. *Breusing, A.* [1879] As. Nr. 96 (1880) 129-.
- Verniers. *Matzka, W.* Grunert Arch. 34 (1860) 334-.

### CALCULATING MACHINES.

- Addition machine. *Goss, J.* Tilloch Ph. Mg. 41 (1813) 166-.
- Arithmetical machine, *Čebyšev's. Bool, V. G.* von. Mosc. S. Sc. Bl. 91 (No. 1) (1894) 12-.
- — — — — with continuous motion. *Tchebitchef, P. L.* Rv. Sc. 4 (1882) 402-.
- — — — — supplementary explanation. *Čebyšev, P. L.* Mosc. S. Sc. Bl. 91 (No. 1) (1894) 22.
- machines, history. *Mehmke, R.* Prace Mt.-Fiz. 6 (1895) 177-.
- Arithmometer, *Thomas's. Ettingshausen, A.* von. Wien SB. 24 (1857) 16-.
- — — — — *Reuleaux, F.* Civing. 8 (1862) 182-.
- — — — — *Hirn, G. A.* Les Mondes 3 (1863) 433-.
- — — — — *Junge, A. Z.* Mth. Ps. 9 (1864) 198-.
- — — — — *Zillmer, —.* I. Act. J. 15 (\*1870) 25-.
- — — — — *Cavallero, A.* Cuyper Rv. Un. 8 (1880) 309-.

## Calculating Machines 0080

- Arithmometer, *Thomas's, actuarial use. Gray, P. I.* Act. J. 17 (\*1873) 249-; 18 (\*1875) 20-, 123-.
- — — — — adaptation of assurance formulæ to. *Hannington, J.* Assur. Mg. 12 (\*1866) 184.
- — — — — use. *Hannington, (Maj.-Gen.).* I. Act. J. 16 (\*1872) 244-.
- — — — — use. *Hirn, G. A.* A. Gén. Civ. 2 (1863) (pte. 2) 113-, 153-.
- — — — — *Hancock, W. J.* I. Act. J. 16 (\*1872) 265-.
- — — — — in constructing tables. *Carment, D.* I. Act. J. 22 (\*1881) 368-; 23 (\*1882) 232.
- Calculating apparatus, arithmetical puzzles. *Lucas, E.* Rv. Sc. 45 (1890) 1-.
- — — — — based on Napier's rods. *Bridge, J.* Ph. Mg. 9 (1880) 191-.
- circle. *Weiss, P.* C. R. 131 (1900) 1289-.
- instruments and machines. (2) Logarithmic scales. (3) Graphic processes. *Ocagne, M. d'. A. Cons. Arts et Mét.* 5 (1893) 231-, 323-; 6 (1894) 42-.
- machine. *Babbage, C.* Edinb. Ph. J. 8 (1823) 122-.
- — — — — *Olivier, T.* Par. Bl. S. Encour. 45 (1846) 153-.
- — — — — *Nyström, J. W.* Franklin I. J. 21 (1851) 262-.
- — — — — *Selling, E. D.* Nf. Tbl. (1887) 234-; Würzb. Ps. Md. Sb. (1888) 148-; Czgt. Opt. 9 (1898) 3-.
- — — — — *Levänen, S.* Helsingf. Öfv. 38 (1896) 26-.
- — — — — *Siedentopf, H.* N.-Vorp. Mt. 30 (1899) xvii-.
- — — — — or arithmometer. *Hoyan, —.* (vi Adds.) Par. Bl. S. Encour. 21 (1822) 355-.
- — — — — *Thomas, —.* Moigno Cosmos 4 (1854) 72-, 186-.
- — — — — *Babbage's. Bailey, F.* Tilloch Ph. Mg. 63 (1824) 355-.
- — — — — *Ménabrea, L. F.* Taylor Sc. Mm. 3 (1843) 666-.
- — — — — *Brit. Ass. Comm. B. A. Rp.* (1878) 92-.
- — — — — *Ménabrea, (le gén.) L. F.* C. R. 99 (1884) 179-.
- — — — — mechanical arrangements. *Babbage, (Maj.-Gen.) H. P.* B. A. Rp. (1888) 616-.
- — — — — for definite integrals. *Moseley, H.* B. A. Rp. (1841) (Pt. 2) 35-.
- — — — — duplex. *Küttner, W.* Dingler 300 (1896) 199-.
- — — — — &c. *Ramsing, H. M.* Mth. Ts. 2 (1860) 65-.
- — — — — *Fowler's. De Morgan, A.* R. S. P. 4 (1840) 243-.
- — — — — *Henri Genaille's. Genaille, H.* As. Fr. C. R. (1894) (Pt. 2) 272-.
- — — — — new. *Lalanne, L.* C. R. 9 (1839) 319-.
- — — — — *Fowler, —.* B. A. Rp. (1841) (Pt. 2) 89-.
- — — — — *Grant, G. B.* Am. J. Sc. 8 (1874) 277-.

## 0080 Calculating Machines

- Calculating machine, new. *Bollée, L. C.* R. 109 (1889) 737-.
- , —. *Strehl, K.* *Opt. 11* (1890) 242-.
- , —, old. *Cadell, W. A.* *Thomson A. Ph. 3* (1814) 251-.
- , — for products, quotients, logs., and powers of numbers. *Moseley, H.* *Ph. Mg. 30* (1847) 171-.
- , —, prospectus, &c. *Slonimsky, C. Z.* *Crelle J. 28* (1844) 184-.
- , — for real roots of numerical equations. *Moth, F. X.* *Wien D. 1* (1850) 105-.
- , —, report. *Wiberg, —.* *C. R. 56* (1863) 330-.
- , —, Scheutz's. *Meidinger, H.* *Dingler 156* (1860) 241-, 321-.
- , —, Selling's. *Poppe, A.* *Dingler 271* (1899) 193-.
- , —, machines. *Hélie, —.* *Eure Rec. Tr. 2* (1842) 170-.
- , —, *Olivier, T.* *Par. Bll. S. Encour. 42* (1843) 411-.
- , —, *Jomard, E. F.* *Par. Bll. S. Encour. 42* (1843) 548-.
- , —, *Lauterburg, —.* *Bern Mt. (1863) 20-*.
- , —, *Warren, T. P. B.* *Ph. Mg. 43* (1872) 396-.
- , —, *Edmondson, J.* [1885] *L. Ps. S. P. 7* (1886) 81-; *Ph. Mg. 20* (1885) 15-.
- , —, *Davis, H. S.* *Pop. As. 4* (1897) 20-.
- , —, *Torres, L. C. B.* 130 (1900) 472-.
- , —, arithmograph. *Gathey, —.* *Par. Bll. S. Encour. 15* (1816) 50-.
- , —, continuous. *Hele-Shaw, H. S.* *Phil. Trans. 176* (1896) 367-.
- , —, history. *Mehmke, R.* *D. Mth. Vr. Jbr. 3* (1894) 59-.
- , —, and instruments. *Ocagne, M. d'. Brux. S. Sc. A. 17* (1893) (Pt. 1) 84-.
- , —, invented by Russians. *Boole, V. von. Mosc. S. Sc. Bll. 92* (No. 1) (1896) 33-.
- , —, theory. *Stamm, E.* *Mil. I. Lomb. Rd. 2* (1865) 360-.
- Calculation and calculating machines. *Lucas, É.* *As. Fr. C. R. (1884) (Pt. 1) 111-*.
- , —, mechanical aids. *Sang, E.* *I. Act. J. 16* (\*1872) 253-.
- Calculations, instruments to aid. *Thomson, G.* [1896] *Sc. S. Arts T. 14* (1898) 172-.
- Chinese-Japanese calculating machine, and Chinese Swan-Pan (calculating table). *Westphal, A.* (xii) *D. Gs. Ostas. Mt. 1* (1873-76) (Heft 8) 27-, (Heft 9) 43-.
- Efficiency, apparatus for calculating. *Boys, C. V.* (ix) [1882] *L. Ps. S. P. 5* (1884) 28-; *Ph. Mg. 13* (1882) 193-.
- Logarithmic calculating rules, Lambert's. *Schweigger, J. S. C.* *Schweigger J. 14* (1815) 115-.
- Slide-rule. *Burg, A.* *Wien Jb. Pol. I. 16* (1830) 101-.
- , —. *Burdon, —.* *C. R. 58* (1864) 573-.
- , —. *Mackesy, W. H.* *Medley I. Eng. 4* (1867) 349-.
- , —. *Schwind, F. von* [1873] *Innsb. Nt. Md. B. 4* (1874) liv-.

## Models 0080

- Slide-rule. *Boys, C. V.* *Nt. 32* (1885) 627-.
- , —, employment. *Herrmann, E.* *Oestr. Z. Brgw. 15* (1867) 193-.
- , —, *Charnoz, J.* *Rv. Mar. et Col. 57* (1878) 493-.
- , —, English. *Sedlacek, E.* *Hammer-schmidt Al. Oestr. Z. (1846) 439-, 451-, 465-, 478-; (1847) 182-, 221-, 318-, 342-, 365-, 390-, 401-*.
- , —, Fuller's. *Fenton, J. J.* *Vict. R. S. T. 22* (1886) 57-.
- , —, for gauging casks. *Young, (Dr) T.* *QJ. Sc. 16* (1823) 357-.
- , —, gunner's. *Smith, John T.* *Madras Eng. Rp. 2* (1846) 14-.
- , —, model. *Beghin, A.* *As. Fr. C. R. (1900) (Pt. 1) 127-*.
- , —, new. *Gallice, G.* *C. R. 128* (1899) 163-.
- , —, *Fuller, —.* *Hann. Archt.-Vr. Z. 46* (1900) 203-.
- , —, calculating. *Fuller, G.* (xii) [1879] *Belfast NH. S. P. (1878-80) 36-*.
- , —, form of. *Beghin, A.* *As. Fr. C. R. (1899) (Pt. 2) 142-*.
- , —, proposed addition. *Schweth, W. D. Nf. Vh. (1900) (Th. 2, Hälfte 1) 66-*.
- , —, proposed forms. *Darwin, G. H. L. Mth. S. P. 6* (1875) 113.
- , —, radial cursor. *Lanchester, F. W.* [1895] *L. Ps. S. P. 14* (1896) 8-; *Ph. Mg. 41* (1896) 52-.
- , —, solution of equations in three variables. *San Roberto, P. di.* [1867] *Tor. Mm. Ac. 25* (1871) 53-.
- , —, treatment of equation in two variables. *San Roberto, P. di.* *Tor. At. Ac. Sc. 2* (1866-67) 454-.
- , —, use. *Boys, C. V.* *V. Nost. Eng. Mg. 33* (1885) 512-.
- , —, rules, Everett's proportion-table. *Everett, J. D.* *Ph. Mg. 32* (1866) 350-.
- , —, Fuller's calculating helix, and historical notes on calculating instruments with logarithmic divisions. *Favaro, A.* *Ven. I. At. 5* (1879) 495-.
- , —, logarithmic. *Sedlacek, E.* *Hammer-schmidt Al. Oestr. Z. (1847) 493-, 507-, 521-, 531-*.
- , —, modified. *Mannheim, A.* *N. A. Mth. 12* (1853) 327-.

### MODELS.

- Cubic surface with 27 real lines. *Wiener, —.* *D. Nf. Tbl. (\*1868) 56-*.
- , —, —, —, —. *Blythe, W. H.* *Camb. Ph. S. P. 8* (1895) 241-.
- , —, —, —, —. *Taylor, H. M.* *Camb. Ph. S. T. 18* (1900) 375-.
- , —, —, —, —, Wiener's model. *Cayley, A.* [1871] *Camb. Ph. S. T. 12* (1879) 366-.
- , —, surfaces, construction of models. *Blythe, W. H.* *QJ. Mth. 29* (1898) 206-.
- , —, model by Rodenburg. *Korteweg, D. J.* *N. Arch. Wisk. 20* (1893) 63-; *Fsch. Mth. (1893-94) 83*.
- Cylindroid. *Ball, R. S.* *Ph. Mg. 42* (1871) 181-; *Am. As. P. (1884) 52-*.

Descriptive geometry, models. *Didier*, —, & *Evvard*, —. Par. S. Phlm. Bll. (1888) 177-.

Ellipsoid, model of the centro-surface. *Kummer*, E. E. Berl. Mb. (1862) 426-.

Goniometrical instruction. *Hosa*, F. Arch. Mth. Ps. 61 (1877) 108-.

Kinematic models, epicycloids, linkwork. *Schilling*, F. D. Nf. Vh. (1898) (Th. 2, Hälfte 1) 6-.

Mathematical models, use. *Emch*, A. Kan. Ac. Sc. T. 14 (1896) 90-.

Minimal surface, model in plaster. *Schwarz*, H. A. Berl. Mb. (1872) 122-.

Paraboloids, hyperbolic, model. *Olivier*, T. Par. S. Phlm. N. Bll. (1882) 184-.

Pencils, thin, models. *Kummer*, E. E. Berl. Mb. (1860) 469-.

Ronayne's cubes. *Hennessey*, H. Ph. Mg. 89 (1895) 188-.

Ruled surface, 3rd order. *La Gournerie*, J. de. Par. A. Cons. 6 (1866) 205-.

Sections of quadric surfaces. *Wiener*, —. Karlsruhe Nt. Vr. Vh. 10 (1888) (Sb.) 50-.

Stereographic equatorial projection of a sphere, transformation by means of a form of the Peaucellier cell. *Phillips*, A. W. B. A. Rp. (1884) 649.

Subdivision of an arbitrary angle by models. *Strauss*, A. Arch. Mth. Ps. 12 (1894) 177-.

Thread models of developable surfaces. *Schoute*, P. H. Amat. Ak. Vs. [2] (1894) 8-.

### 0090 Aids to Calculation, Graphical Processes.

Abaci adapted to equations with three and four variables. *Ocagne*, M. d'. Brux. S. Sc. A. 22 (1898) (Pt. 1) 78-.

—, graphical calculation by hexagonal. *Lallemand*, C. C. R. 102 (1886) 816-.

Abacus. *Knott*, C. G. Jap. As. S. T. 14 (1886) 18-.

—, *Duporcq*, E. C. R. 127 (1898) 265-.

— for diurnal and semi-diurnal tides. *Ocagne*, M. d'. C. R. 122 (1896) 298-.

—, new kind. *Goedseels*, —. Brux. S. Sc. A. 22 (1898) (Pt. 1) 43-.

— with 16 and 18 variables. *Lafay*, A. C. R. 119 (1894) 1195-.

Algebraic functions, representation. *Ott*, C. de. Par. A. Cons. 6 (1866) 450-.

Anamorphosis, problem. *Lecornu*, L. C. R. 102 (1886) 813-.

Arbitrary functions, development. *Perry*, J., & *Hunt*, H. F. [1895] L. Ps. S. P. 14 (1896) 1-; Ph. Mg. 40 (1895) 508-.

Arc, construction when centre is inaccessible. *Prevost*, P. Bb. Un. 49 (1832) 98-.

Archimedes' screw, applications in graphical calculation. *Sayno*, A. Mil. I. Lomb. Rd. 7 (1874) 163-.

Arithmetic mean, determination. *Ivancich*, J. N. Wien Berg-Hm. Jb. 24 (1876) 295-.

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- Approximate multiplication and division. *Robertson, J. A. I. Act. J.* 32 (1896) 160-.
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- equations, certain. *Pincherle, S. Bologna Ac. Sc. Mm.* 5 (1895-96) 668-.
- , employment. *Cauchy, A. L. C. R.* 17 (1843) 449-.
- , interchange of symbols. *Graves, C. Ir. Ac. P.* 6 (1853-54) 144-.
- , resolution of non-linear. *Cauchy, A. L. C. R.* 22 (1846) 235-.
- , theorems and formulae deduced from. *Cauchy, A. L. C. R.* 17 (1843) 877-.
- expansions. *Russell, W. H. L. R. S. P.* 14 (1865) 329-.
- methods, proofs of (1) formula for  $n$ th differential coefficient, (2) Euler's theorems on quantics, (3) Staudt's theorem on Bernoulli's numbers. *Buchheim, A. Mess. Mth.* 11 (1882) 143-.
- relations
- $$x^{n-r} \frac{d^n}{dx^n} x^r \cdot u = \left( \frac{d}{dx} + r \right) \left( \frac{d}{dx} + r - 1 \right) \dots \left( \frac{d}{dx} + r - n + 1 \right) u.$$
- &c. *Johnson, W. W. Mess. Mth.* 11 (1882) 191-.
- theorem involving repeated differentiations. *Glaisher, J. W. L. [1879] Camb. Ph. S. P.* 3 (1880) 269-.
- theorems, Crofton. *Glaisher, J. W. L. QJ. Mth.* 16 (1879) 257-.
- variability of several dimensions. *Formenti, C. Mil. I. Lomb. Rd.* 16 (1883) 288-, 351-.
- versus operative expansion. *Hathaway, A. S. Des Moines Anal.* 5 (1878) 38-.
- Symbolic expression, properties and application to attraction of ellipsoid. *Cayley, A. Camb. Mth. J.* 3 (1843) 62-.
- Symbols of operation. *Crofton, M. W. Am. J. Mth.* 4 (1881) 269-.

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- Symbols, relation of certain. *Cockle, (Sir) J. [1879] QJ. Mth.* 17 (1881) 20-, 208-.
- Ternary quadric operators on products of forms of any orders. *Walker, J. J. L. Mth. S. P.* 20 (1889) 110-.
- Transmutations. *Bourlet, C. Par. S. Mth. Bll.* 25 (1897) 132-.
- Uniform substitutions and Babbage's problem. *Iaggi, E. N. A. Mth.* 19 (1900) 483-.
- , convergence. *Lémeray, E. M. N. A. Mth.* 16 (1897) 306-; 17 (1898) 75-.
- $\frac{d^n f(x)}{dx^n}$  regarded as function of  $n$ . *Krug, A. Wien. Ak. D.* 57 (1890) 151-.

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d'Alembert's equation

$$(1 + h\sqrt{-1})^m = (1 - h\sqrt{-1})^m.$$

- Cossali, P. [1783] Mod. Mm. S. It.* 9 (1802) 231-.
- Algebraic couples. *Hamilton, (Sir) W. R. [1835] Ir. Ac. T.* 17 (1837) 293-.
- , *Cayley, A. Ph. Mg.* 27 (1845) 88-.
- , *Hargreave, C. J. B. A. Rp.* (1857) 184-.
- equations, theory. *Gegenbauer, L. Mh. Mth. Ps.* 6 (1895) 12-.
- integers. *Landsberg, G. D. Mth. Vr. Jbr.* 4 (1897) 111-.
- numbers, new foundation for theory. *Hensel, K. D. Mth. Vr. Jbr.* 6 (1899) (Heft 1) 83-.
- and transcendent equations, complex numbers derived from. *Hug, J. C. Zür. Vjschr.* 7 (1862) 270-.
- triplets. *Graves, C. Ir. Ac. P.* 3 (1847) 51-, 57-, 80-, 105-.
- Calculation with  $p+q\sqrt{-1}$ . *Ohm, M. D. Nf. Vsm. B.* (1845) 73-.
- Chessboard, mathematical theory. Problem of  $n$  queens on board of  $n^2$  spaces. *Günther, S. Arch. Mth. Ps.* 56 (1874) 281-.
- Complex and bicomplex numbers, theory. *Benthem, A. Arch. Néerl.* 12 (1877) 113-.
- coordinates in plane geometry. *Berlin, M. Lund. Acta Un.* 9 (1872) (Mth.) No. 4, 45 pp.
- elements in analytical geometry, significance. *Stolz, O. Mth. A.* 4 (1871) 416-.
- factors. *Cauchy, A. L. C. R.* 24 (1847) 347-.
- forms, real representations. *Segre, C. Mth. A.* 40 (1892) 413-.
- geometry, contribution. *Sforza, G. G. Mt.* 30 (1892) 159-.
- integers. *Lanavicensis (Sylvester, J. J.). QJ. Mth.* 4 (1861) 94-, 124-.
- magnitudes, addition-logarithms for. *Mehmke, R. Z. Mth. Ps.* 40 (1895) 15-.
- number, cosine, significance in plane geometry. *Thiele, T. N. (xii) Ts. Mth.* 6 (1876) 177-.

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- , —. *Paci, P. G.* Mt. 11 (1873) 244-.
- , —. *Zolotarev, E. I.* [1877] St. Pét. Ac. Sc. Bll. 24 (1878) 810-.
- , —, analysis. *Denzler, W.* Zür. Mt. 8 (1853-55) 560-.
- , —, with application to equation  $x^{\lambda} + y^{\lambda} = z^{\lambda}$ . *Kummer, E. E.* Berl. Ab. (1857) (Mth.) 41-.
- , —, application to  $n$  dimensions. *Mollame, V.* G. Mt. 31 (1893) 271-.
- , —, comprised in formula  $a + b\sqrt{-c}$ . *Pepin, T.* Liouv. J. Mth. 1 (1875) 317-.
- , —, elementary theory. *Hottel, J.* Bordeaux Mm. S. Sc. 5 (1867) 1-; 6 (1868) 1-; 8 (1870) 97-; 1 (1876) 1-.
- , —, formed from roots of unity. *Kummer, E. E.* Liouv. J. Mth. 12 (1847) 185-; 16 (1851) 377-; Berl. Mb. (1861) 1051-; (1863) 21-.
- , —, —, —. *Kronecker, L.* Berl. Mb. (1863) 340-.
- , —, —, —. *Fuchs, L.* [1864] Crelle J. 65 (1866) 74-.
- , —, —, —, prime factors. *Kummer, E. E.* Crelle J. 85 (1847) 327-.
- , —, —, —, and 2nd factor of class number. *Kummer, E. E.* Berl. Mb. (1870) 855-.
- , —, —, —, simplest representation. *Kummer, E. E.* Berl. Mb. (1870) 409-.
- , —, —, —,  $\omega^m = 1$ , ideal prime factors. *Kummer, E. E.* Berl. Ab. (1856) (Mth.) 1-.
- , —, —, —,  $\lambda$ th roots of unity. *Kummer, E. E.* Crelle J. 40 (1850) 93-; 117-.
- , —, —, —, 31st roots of unity. *Kummer, E. E.* Berl. Mb. (1870) 755-.
- , —, Gaussian representation of. *Breuer, A.* Arch. Mth. Ps. 12 (1894) 337-.
- , —, geometric representation of a new kind. *Kotelnikov, A. P.* Kazan S. Ps.-Mth. Bll. 6 (1896) (Prot.) 26.
- , —, —, significance (Sohlömilch). *Unferdinger, F.* Arch. Mth. Ps. 52 (1871) 252-.
- , —, introduction. *Baltzer, R.* [1882] Crelle J. Mth. 94 (1883) 87-.
- , —, mechanical interpretation. *Žbikovskij, A. K.* Kazan S. Nt. (Ps.-Mth.) P. 6 (1888) 6.
- , —, multiplication, geometric significance. *Orelli, J.* Zür. Vjschr. 20 (1875) 443-.
- , —, new method for graphical representation. *Brill, J.* Mess. Mth. 17 (1888) 80-.
- , —, —, and their functions, theory. *Hertz, K., & Dickstein, S.* Par. T. Nauk Šc. Pam. 7 (\*1875) Art. 3, 60 pp.
- , —, theorem of Dedekind, proof. *Study, E.* Gött. Nr. (1898) 1-.
- , —, theory. *Lejeune-Dirichlet, G.* Berl. Ab. (1841) 141-.
- , —, —. *Kummer, E. E.* Berl. B. (1846) 87-; Crelle J. 35 (1847) 819-.
- , —, —. *Wantzel, L.* C. R. 24 (1847) 430-.
- , —, —. *Bachmann, P.* Crelle J. 87 (1867) 200-.
- , —, —. *Dedekind, R.* C. R. 90 (1880) 1205-.
- Complex numbers, theory. *Zolotarev, E. J.* Liouv. J. Mth. 6 (1880) 51-, 129-.
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- , —. *Lejeune-Dirichlet, G.* Berl. B. (1846) 103-.
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- , —. *Molk, J.* Bll. Sc. Mth. As. 7 (1883) (Pt. 1) 183-.
- , —, addition to memoir on. *Kronecker, L.* C. R. 99 (1884) 765-.
- , —, expressions formed from. *Kummer, E. E.* Crelle J. 50 (1855) 212-.
- Conjugate functions and imaginary logarithms. *Hamilton, (Sir) W. R.* B. A. Rp. (1834) 519-.
- Cube root of  $\sqrt{a+bi}$  in form  $x+yi$ , simple solution. *Simony, O.* Arch. Mth. Ps. 55 (1873) 72-.
- , —, roots, imaginary, number of (Lockhart). *Horner, W. G.* Thomson A. Ph. 8 (1816) 279-, 388-.
- , —, of unity, theorem of algebra, geometry deduced from. *Appell, P.* C. R. 84 (1877) 540-.
- Directive numbers, theorems, and proof of Cauchy's theorem on closed contours. *Tran-son, A. N. A.* Mth. 7 (1868) 97-.
- Discriminants of finite "fields." *Dedekind, R.* Gött. Ab. 29 (1882) Art. 2, 56 pp.
- Every equation in one unknown can be satisfied by a complex value of this unknown, geometric proof. *Wittstein, T.* Grunert Arch. 6 (1845) 225-.
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- G. C. M. of 2 complex numbers, number of divisions. *Dupré, A.* Liouv. J. Mth. 13 (1848) 333-.
- Geometrical representation of  $\sqrt{-1}$ , consideration of objections. *Warren, J.* Phil. Trans. (1829) 241-.
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- , —. *François, J. F.* Gergonne A. Mth. 4 (1813-14) 222-, 364-.
- , —. *Volpicelli, P.* G. Arcad. 52 (1831) 221-.
- , —. *Bellavitis, G.* Poligrafo 5 (1831) 15-; 12 (1832) 211-.
- , —. *Arenstein, J.* Haidinger B. 3 (1847) 292-.
- , —. *Bellavitis, G.* Ven. At. 6 (1847) 459-; Ven. Mm. I. 4 (1852) 243-.
- , —. *Arenstein, J.* Haidinger Ab. 2 (1848) (Ab. 2) 43-.
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- , —. *Grunert, J. A.* Grunert Arch. 20 (1853) 121-.
- , —. *Sabatid, J.* N. A. Mth. 2 (1863) 206-.
- , —. *Cheyrezy, U.* N. A. Mth. 3 (1864) 445-.
- , —. *Seze, S. A.* N. Mg. Ntvd. 16 (1869) 1-; 17 (1870) 233-; Arch. Mth. Ntvd. 7 (1882) 115-.

- Imaginaries, d'Alembert's theorem. *Du Bourguet*, —. Gergonne A. Mth. 4 (1813-14) 20-.
- , —. Gergonne, J. D. Gergonne A. Mth. 4 (1813-14) 23-.
- , —. Barsotti, G. Lucca At. Ac. 11 (1842) 393-.
- in algebra. *Janssen van Raaij, W. H. L.* Haarl. Ms. Teyl. Arch. 4 (1896) 53-.
- , application to mechanics. *Durège*, —. Zür. Vjschr. 7 (1862) 293-.
- , — summation of trigonometric series, and calculation of integrals. *Michaëlis, J. P.* Lux. S. Sc. Mm. 7 (1864) 173-.
- , — theory of curves. *Durège, H.* Arch. Mth. Ps. 42 (1864) 1-.
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- , Bolyai's theory. *Stückel, P.* Mth. Term. Ét. 17 (1899) 259-; Mth. Nt. B. Ung. 16 (1899) 263-.
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- , calculus. *Carmichael, R.* Ph. Mg. 6 (1853) 273-.
- , construction for. *Cayley, A.* Mess. Mth. 10 (1861) 1-.
- , defective notation. *Mathematicus. [Pseudon.]* (vi Adds.) Nicholson J. 29 (1811) 254-; 31 (1812) 193-.
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- , —, applications to cubic equations, etc. *Wittstein, T.* Grunert Arch. 7 (1846) 402-.
- , — significance of form  $a + b\sqrt{-1}$ . *Müller, G. W.* Grunert Arch. 1 (1841) 397-.
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- , paradox resulting from employment. *Mathematicus. [Pseudon.]* (vi Adds.) Nicholson J. 30 (1812) 209-.
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- , reality. *Matzka, W.* Böhm. Gs. Ab. 6 (1851) 179-.
- , relation of  $\sqrt{-1}$  to geometrical perpendicularity. *Paterson, J.* Am. As. P. (1851) 1-.
- , representation, etc. *Ballauff, L.* Grunert Arch. 5 (1844) 259-.
- , —, method. *Duport*, —. Par. Éc. Norm. A. 9 (1880) 801-.
- , —. *Amstein, H.* Laus. S. Vd. Bll. 18 (1882) 1-.
- , —, new. *Duport*, —. C. R. 88 (1879) 1071-.
- , simplification. *Nordmark, Z.* Ups. N. Acta S. Sc. 8 (1821) 136-.
- , 8-square. *Cayley, A.* [1882] Am. J. Mth. 4 (1881) 293-.
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- , theory. *Français, J. F.* Gergonne A. Mth. 4 (1813-14) 364-.
- , —. *Dirksen, E. H.* Berl. B. (1839) 6-.
- , —. *Burhenne, H.* Grunert Arch. 22 (1854) 43-.
- , —. *Laurent, P. A.* Par. Éc. Pol. J. 23 (1863) (40<sup>e</sup> cah.) 75-.
- , —. *Berger*, —. [1864] Mntp. Mm. Ac. Sect. Sc. 6 (1864-66) 1-.
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- , truth of conclusions obtained. *Woodhouse, R.* Phil. Trans. (1801) 89-.
- , use in integral calculus. *Stille, W. A.* Des Moines Anal. 2 (1875) 83-.
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— — —  $e^{2\pi\sqrt{-1}}$ , paradox. *Catalan, E. C.* N. A. Mth. 8 (1869) 456-.

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- — —, and integration of differential equations. *Beudon, J.* C. R. 125 (1897) 811-.
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- Infinitesimal automorphic transformations of a Pfaffian equation. *Vivanti, G.* Palermo Cir. Mt. Rd. 12 (1898) 1-.
- — — — —. *Weber, E. von.* Palermo Cir. Mt. Rd. 12 (1898) 133-.
- groups, singular transformations. *Taber, H.* Am. Ac. P. 35 (1900) 575-.
- transformations of all transitive finite groups, given by quotients of power series. *Schur, F.* Leip. Mth. Ps. B. 42 (1890) 1-.
- Integral invariants of continuous transformation groups. *Żorawski, K.* Krk. Ak. (Mt.-Prz.) Rs. 8 (1895) 232-; Cro. Ac. Sc. Bll. (1895) 127-.
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- Linear differential equations. *Lie, S.* Christiania F. (1885) No. 21, 4 pp.
- — —, groups of transformations. *Picard, É.* C. R. 119 (1894) 584-.
- equations, groups. *Poincaré, H.* Acta Mth. 4 (1884) 201-.
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- — — whose operations are permutable. *Burnside, W. L.* Mth. S. P. 29 (1898) 325-.
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- — — — — with two independent variables, admitting a continuous group of transformations. *Tannenber, W. de.* *Toul. Fac. Sc. A.* 5 (1891) B, 150 pp.
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- , —, —, reciprocals of cyclic differences. *Saint-Germain, — de.* *Caen Ac. Mm.* (1892) (Pt. 1) 15-.
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- , Waring's analytical proof. *Serret, P. N.* *A. Mth.* 7 (1848) 199-.
- If  $a+b+c=0$ ,
- $$\left( \frac{b-c}{a} + \frac{c-a}{b} + \frac{a-b}{c} \right)$$
- $$\left( \frac{a}{b-c} + \frac{b}{c-a} + \frac{c}{a-b} \right) = 9.$$
- Glaisher, J. W. L.* [1880] *Mess. Mth.* 10 (1881) 54-.
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- , —, —, —, —. *Björling, C. F. E.* Arch. Mth. Ps. 55 (1878) 429-.
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- ,  $n$ th power. *Studnička, F. J.* Prag Sb. (1879) 375-; *Časopis* 9 (\*1880) 49-.
- ,  $(x^2 - 1)^n$ , property. *Polignac, C. de.* [1874] Par. S. Mth. Bll. 3 (1875) 19-.
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- , —, remainder in  $(x - 1)^p/x^m$ . *Catalan, E. C.* Liège S. Sc. Mm. 15 (1888) No. 1, 142-.
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—  $\{(n-1)2a^2 > 2ab\}$ . *Grunert, J. A.* *Grunert Arch.* 26 (1856) 105-.

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- , number of reentrant moves in half-boards. *Laquière, E. M.* [1890] Par. S. Mth. Bll. 9 (1891) 11-.
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- , —. *Rohn*, K. Dresden Isis Sb. (1889) (Ab.) 89-.
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- , —, generalisation. *Günther*, S. Arch. Mth. Ps. 58 (1874) 281-.
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- Thiele, T. N.* Kjøb. Ov. (1895) 415-, xv-.
- application to explanation of Arbogast's method.
- De Morgan, A.* Camb. and Dubl. Mth. J. 6 (1851) 85-.
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- Marsano, G. B.* G. Mt. 19 (1881) 158-; 20 (1882) 249-.
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- .* *Nieuwenglovski, G. H.* N. A. Mth. 13 (1874) 285-.
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- Sylvester, J. J.* (xn) [1882] J. H. Un. Cir. [2] (1883) 2.
- ( — — — — — ), prof.
- Franklin, F.* (xn) [1882] J. H. Un. Cir. [2] (1883) 24.

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- , *Durrande, J. B.* *Gergonne A. Mth.* 7 (1816-17) 334-.
- , *Catalan, E. C.* *Liouv. J. Mth.* 3 (1838) 111-; 5 (1840) 264; 6 (1841) 74.
- , *Chevillard, A. J.* *N. A. Mth.* 3 (1844) 537-.
- , *Kirkman, T. P.* *Camb. and Dubl. Mth. J.* 2 (1847) 191-; 5 (1850) 255-.
- , *Anstice, R. R.* *Camb. and Dubl. Mth. J.* 7 (1852) 279-; 8 (1853) 149-.
- , *Prouhet, E.* *N. A. Mth.* 12 (1853) 85-.
- , *Kelland, P.* [1855] *Edinb. R. S. T.* 21 (1857) 359-.
- , *Polignac, (Prince) C. de.* [1868] *L. Mth. S. P.* 2 (1869) 69-.
- , *Robertson, A.* *Edinb. Mth. S. P.* 4 (1866) 78-.
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- *Gelin*, —. *Mathesis* 6 (1886) 175-.
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- theorems. *Hessel*, J. F. C. *Grunert Arch.* 7 (1846) 295-.
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- , foundations of new theory. *MacMahon*, (Maj.) P. A. *Phil. Trans. (A)* 194 (1900) 361-.
- , game of mousetrap. *Cayley*, A. *QJ. Mth.* 15 (1878) 8-.
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- , generalisation of elementary. *Traverso*, N. G. *Mt.* 35 (1897) 174-.
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- , Steiner. *Reiss*, M. [1856] *Crelle J.* 56 (1859) 326-.
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- Compositions of numbers, theory. *MacMahon*, P. A. [1892] *Phil. Trans. (A)* 184 (1894) 835-.
- Connected elements, notation for and distribution. *Polignac*, C. de. *As. Fr. C. R.* (1884) (*Pt. 2*) 37-.
- Contact and isolation, a problem in permutations. *Fortey*, H. L. *Mth. S. P.* 15 (\*1883-84) 98-.
- Cycle, problem of completing a. *Waelsh*, E. *Wien Ak. Sb.* 90 (1885) (*Ab. 2*) 160-.
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- Warburton, H. [1847] Camb. Ph. S. T. 8 (1849) 471-.  
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 Brioschi, F. Tortolini A. 8 (1857) 5-.  
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 Catalan, E. C. N. A. Mth. 8 (1869) 407-.  
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- number of ways of breaking up a number with one law of subordinate partition. *Volpicelli, P.* Rm. At. 10 (1856-57) 43-, 122-.
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*Lucas, É.* [1877] Mess. Mth. 7 (1878) 84-.
- Sums of 4 algebraic series. *Glaisher, J. W. L.* [1877] Mess. Mth. 7 (1878) 119-.
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*Lampe, E.* Fsch. Mth. (1893-94) 409-.
- — — natural numbers. *Mollame, V.* N. A. Mth. 5 (1886) 364-.
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$$\sum_{r=1}^{r=n} r^2.$$

- Collins, E.* St Pét. Ac. Sc. Mm. 8 (1817-18) 242-.
- Schlömilch, O.* Grunert Arch. 10 (1847) 842-.
- Thacker, A.* Camb. and Dubl. Mth. J. 5 (1850) 243-.
- Mourgues, —.* N. A. Mth. 10 (1851) 78-.
- Catalan, E. C.* N. A. Mth. 15 (1856) 230-.
- Siacci, F.* (VIII) A. Mt. 4 (1861) 46-.
- Lucas, É.* N. A. Mth. 9 (1870) 49-.
- Amigues, É.* N. A. Mth. 10 (1871) 79-.
- Dostor, G.* Arch. Mth. Ps. 54 (1872) 70-; 57 (1875) 222-.
- Lampe, E.* [1877] Crelle J. Mth. 84 (1878) 270-.
- Lucas, É.* N. A. Mth. 16 (1877) 18-.
- Peindl, M.* Časopis 6 (\*1877) 279-; Fsch. Mth. (\*1877) 110-.
- Dostor, G.* Arch. Mth. Ps. 63 (1879) 435-; 64 (1879) 310-.
- Marchand, D.* N. A. Mth. 20 (1881) 140-.
- Schier, O.* Wien Ak. Sb. 85 (1882) (Ab. 2) 508-.
- Boije af Gennäs, C. O.* Stockh. Ak. Hndl. Bh. 10 (1885) No. 4, 6 pp.
- Slavík, J.* Časopis 16 (1887) 121-; Fsch. Mth. (1887) 240.
- Locchi, E.* Mh. Mth. Ps. 4 (1893) 85-.
- Nielsen, N. N.* Ts. Mth. 4 (B) (1893) 1-; Fsch. Mth. (1893-94) 410-.
- Barbette, E.* Mathesis 14 (1894) 105-.
- Jung, V.* Časopis 28 (1899) 124-; Fsch. Mth. (1899) 247.

$$\sum_{r=1}^{r=n} r^2.$$

- Genocchi, A.* A. Mt. 7 (1865) 151-.
- Cantor, M.* Z. Mth. Ps. 11 (1866) 248-; 12 (1867) 170-.

## 1630 Finite Summation

- Unferdinger, F. Arch. Mth. Ps. 48 (1868) 361-.
- Amigues, É. N. A. Mth. 10 (1871) 117-.
- Glaisher, J. W. L. Mess. Mth. 4 (1875) 168-.
- Rocquigny, F. [G.] de. Les Mondes 51 (1880) 153-.
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- problem of Boncompagni, solution. Matthies-sen, L. Z. Mth. Ps. 13 (1868) 348-.

$$\sum_{r=1}^{r=n} (2r-1)^k.$$

- Bretschneider, C. A. Grunert Arch. 1 (1841) 415-.
- Borchardt, C. W. Berl. Mb. (1857) 301-.
- Brioschi, F. [1857] Tortolini A. 1 (1858) 43-.
- Dostor, G. Arch. Mth. Ps. 64 (1879) 353-.

$$\sum_{r=1}^{r=n} (2r-1)^k \quad (k=3).$$

- Dostor, G. Arch. Mth. Ps. 64 (1879) 356-.

$$\sum_{r=0}^{r=n-1} (a+rd)^m.$$

- Puiseux, V. Liouv. J. Mth. 11 (1846) 477-.
- Gilbert, P. N. A. Mth. 8 (1869) 434-.
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- $\sum_{n=1}^{n=n} (a+n-1)^a h^{n-1}$ ,  $\sum_{n=1}^{n=n} [a+n-1]^a h^{n-1}$ .
- Pepin (le père). N. A. Mth. 15 (1856) 27-.
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- $\sum_{r=1}^{r=n} (r)^a$ . Dostor, G. N. A. Mth. 18 (1879) 459-, 513-.
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- — — — numbers prime to given number.  
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289-.
- Heine, H. E. Crelle J. 53 (1857) 284-.
- König, J. F. Grunert Arch. 33 (1859) 369-.
- Heine, E. Berl. Mb. (1866) 436-.
- Laurent, H. N. A. Mth. 5 (1866) 540-.
- Thiele, T. N. (xii) Ts. Mth. 5 (1869) 144-;  
6 (1870) 145-.
- Eugenio, V. G. Mt. 9 (1871) 358-.
- Günther, S. Arch. Mth. Ps. 55 (1878) 392-.
- Christoffel, E. B. [1874] A. Mt. 6 (1875) 148-.
- Smith, H. J. S. [1875] Mess. Mth. 6 (1877) 1-.
- Glaisher, J. W. L. [1877] Mess. Mth. 7 (1878)  
67-.
- Gegenbauer, L. [1879] Wien Ak. Sb. 80 (1880)  
(Ab. 2) 763-.
- Hoffmann, K. E. [1882] Arch. Mth. Ps. 69  
(1883) 205-.
- Bruno, G. Tor. Ac. Sc. At. 21 (1885) 273-.
- Hermite, —. Bll. Sc. Mth. 9 (1885) 11-.
- Cesáro, E. N. A. Mth. 6 (1887) 29-.

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- Koppe, —. Mth. A. 29 (1887) 187-.
- Veltmann, W. Z. Mth. Ps. 32 (1887) 198-.
- Gamboli, D. [1889] Bologna Rd. (1889-90) 38-.
- Hurwitz, A. Acta Mth. 12 (1899) 367-.
- Pincherle, S. Rm. R. Ac. Linc. Rd. 5 (1889) (Sem. 1) 640-; 7 (1891) (Sem. 1) 604-.
- Gegenbauer, L. Wien Ak. Sb. 98 (1890) (Ab. 2a) 673-; 100 (1891) (Ab. 2a) 635-.
- Amici, E. de. G. Mt. 30 (1892) 217-.
- Markoff, A. [1894] St Pét. Ac. Sc. Bll. 2 (1895) 9-.
- Stieltjes, T. J. Toul. Fac. Sc. A. 8 (1894) J, 122 pp.; 9 (1895) A, 47 pp.
- Klein, F. [1895] D. Mth. Vr. Jbr. 4 (1897) 153-.
- Koch, H. von. Stockh. Öfv. (1895) 101-.
- Lehmer, D. N. A. Mth. 11 (1896-97) 64.
- Saalschütz, —. Königsb. Schr. 38 (1897) [37]-.
- Candiotti, M. R. Arg. S. Ci. A. 46 (1898) 149-.
- Muirhead, R. F. Edinb. Mth. S. P. 17 (1899) 39-.
- Lewicki, W. Wiad. Mt. 4 (1900) 52-; Fachr. Mth. (1900) 215.
- Padé, —. Nt. 62 (1900) 419.
- Steggall, —. Mth. Gz. 1 (1900) 39.
- Macaulay, F. S. Mth. Gz. 1 (1900) 39-.
- algebraic. Borchardt, C. W. N. A. Mth. 13 (1854) 157.
- , Tchébicheff, P. de. Liouv. J. Mth. 10 (1865) 353-.
- , Pincherle, S. Par. Éc. Norm. A. 6 (1889) 145-.
- , application. Pincherle, S. C. R. 108 (1889) 688-.
- , convergence. Halphen, G. H. C. R. 100 (1885) 1451-; 106 (1888) 1326-.
- , Bortolotti, E. Rm. R. Ac. Linc. Rd. 8 (1899) (Sem. 1) 28-.
- , generalisation. Humbert, G. Par. S. Mth. Bll. 8 (1880) 191-; 9 (1881) 24-.
- , Pincherle, S. Bologna Ac. Sc. Mm. 10 (1889) 513-; 4 (1894) 297-; A. Mt. 19 (1891-92) 75-.
- , Hermite, C. A. Mt. 21 (1893) 289-.
- , Padé, H. Liouv. J. Mth. 10 (1894) 291-.
- , generalised. Cordone, G. Palermo Cir. Mt. Rd. 12 (1898) 240-.
- algorithm, Euler's, development. Klug, L. [1881] Arch. Mth. Ps. 67 (1882) 337-.
- , extension. Pincherle, S. Mil. I. Lomb. Rd. 22 (1889) 555-.
- , fundamental rule. Sylvester, J. J. Ph. Mg. 6 (1853) 297-.
- and anakolouthic sums. Sylvester, J. J. Ph. Mg. 8 (1854) 187-.
- for analytic functions. Slebinskij, I. N. Rs. S. Nt. Mm. (Mth.) 7 (1886) 33-; Fachr. Mth. (1886) 160-.
- application. Stern, M. A. Crelle J. 10 (1833) 1-, 154-, 241-, 364-; 11 (1834) 38-, 142-, 277-, 311-.
- , Lieblein, J. Z. Mth. Ps. 13 (1868) 63-.
- , Stieltjes, —. C. R. 118 (1894) 1815-, 1401-.

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- application to change wheels. Glüsfeld, A. Cztg. Opt. 19 (1898) 81-.
- equations. Oettinger, L. [1851] Crelle J. 49 (1855) 66-, 95-.
- applications. Studnička, F. J. Časopis 1 (\*1872) 32-; Fachr. Mth. (\*1872) 82.
- , Seiliger, D. N. Kazan S. Ps.-Mth. Bll. 2 (1893) (Prot.) 54-.
- , new. Markoff, A. Mth. A. 47 (1896) 579-.
- ascending. Günther, —. D. Nt. Tbl. (\*1875) 207-; Z. Mth. Ps. 21 (1876) 178-.
- , Čuber (or Čuber), E. Arch. Mth. Ps. 60 (1877) 265-.
- , Gerevich, E. Orv.-Termt. Ets. (Termt. Szak) (1889) 107-, 187-.
- , application. Gerevich, E. Orv.-Termt. Ets. (Termt. Szak) (1890) 155-.
- for binomial powers (Lagrange). Euler, L. [1780] St Pét. Ac. Sc. Mm. 6 (1818) 3-.
- calculation of  $E \frac{2p}{q} + E \frac{4q}{p} + \dots + E \frac{(p-1)q}{p}$  by. Tatarinov, I. Rec. Mth. (Moscow) 14 (1890) 668-.
- Čebyšev's extension. Hermite, C. [1879] Crelle J. Mth. 88 (1880) 10-.
- and certain series. Catalan, E. C. [1883] Brux. Ac. Mm. 45 (1884) (No. 6) 82 pp.
- class. Osengu, G. Tortolini A. 2 (1851) 317-.
- of functions. Humbert, G. Par. S. Mth. Bll. 8 (1880) 182-.
- combined fractions, finite and purely periodic, value. Sylvester, J. J. C. R. 108 (1889) 1195-.
- for complex quadratic surds. Mathews, G. B. L. Mth. S. P. 20 (1889) 237-.
- conjugate recurrence. Walton, W. QJ. Mth. 4 (1861) 331-.
- with constant quotients. Studnička, F. J. Časopis 17 (1888) 200-; Fachr. Mth. (1888) 200.
- for continued products. Glaisher, J. W. L. (x) L. Mth. S. P. 5 (1873-74) 78-.
- convergence. Schultén, N. G. af (Ål.) [1846] Helsingf. Acta 3 (1852) 397-.
- , Malmsten, C. J. Stockh. Ak. Hndl. (1848) 91-; Camb. and Dubl. Mth. J. 5 (1850) 282-.
- , Stern, M. A. Crelle J. 37 (1848) 255-; Gött. Nr. (1863) 136-.
- , Falk, M. Ts. Mt. Fys. 3 (1870) 197-.
- , Oppermann, L. H. F. (xii) Ts. Mth. 1 (1883) 163-; Fachr. Mth. (1884) 167.
- , Markov, A. A. Kharkov Mth. S. Com. (1885) 29-; Fachr. Mth. (1885) 171.
- , Scheibner, W. Leip. Mth. Ps. B. 40 (1888) 7-.
- , Slebinskij, I. N. Rs. S. Nt. Mm. (Mth.) 8 (1888) 97-; 10 (1889) 201-; Rec. Mth. (Moscow) 14 (1890) 337-, 436-; Fachr. Mth. (1888) 200; (1889) 186; (1890) 220.
- , Markoff, A. Acta Mth. 19 (1894) 93-.
- , Saalschütz, —. Königsb. Schr. 40 (1899) [8]-.
- , Pringsheim, A. Münch. Ak. Sb. 29 (1900) 261-.
- convergents. Guilmin, A. N. A. Mth. 4 (1845) 205-, 311-; 5 (1846) 56-.

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- convergents. *Bartholomäi*, F. *Grunert Arch.* 18 (1852) 328-.
- *Heine*, H. E. *Crelle J.* 57 (1860) 231-.
- *Christoffel*, E. B. *Crelle J.* 58 (1860) 90-.
- *Muir*, T. B. A. Rp. (1876) (Sect.) 27-.
- *Vahlen*, K. T. *Crelle J. Mth.* 115 (1895) 221-.
- , abnormal, of a function, distribution. *Padé*, H. C. R. 130 (1900) 102-.
- , differences. *Dormoy*, H. N. A. *Mth.* 5 (1846) 132-.
- , errors of principal and subsidiary. *Hargreaves*, R. *Mess. Mth.* 27 (1898) 152-.
- , generalisation. *Barbier*, E. C. R. 98 (1884) 1531-.
- , law of formation. *Minding*, E. F. A. *St. Pé. Ac. Sc. Bll.* 13 (1869) 524-.
- , —, Euler's. *Schlegel*, S. F. V. Z. *Mth. Ps.* 22 (1877) 402-.
- , resultants. *Gegenbauer*, L. *Amst. Ak. Vs.* 5 (1897) 289-.
- and convergents, relation. *Seidel*, L. *Münch. Ab.* 7 (1855) 559-.
- converging, application of determinants. *Ramus*, C. *Kiöb. Ov.* (1856) 106-.
- , fractions and converging multiples. *Heawood*, P. J. *Mess. Mth.* 26 (1897) 79-.
- for cube roots. *Seeling*, P. *Grunert Arch.* 8 (1846) 69-.
- , —, *Cordone*, G. G. *Mt.* 32 (1894) 183-.
- , definite integral  $\int_{-1}^{+1} F(x) dx$ . *Stieltjes*, —. C. R. 99 (1884) 508-.
- , —, integrals. *Stieltjes*, —. C. R. 108 (1889) 1297-.
- , descending power series. *Stieltjes*, T. J. *Toul. Fac. Sc. A.* 3 (1899) H, 17 pp.
- , —, —, *Čebyšev*, P. [1892] *St. Pet. Ac. Sc. Mm. (Rs.)* 71 (1893) (Suppl.) No. 3, 73 pp.; *Fachr. Mth.* (1892) 192-.
- development. *Schendel*, L. *Crelle J. Mth.* 80 (1875) 95-.
- , geometrical view. *Klein*, F. *Gött. Nr.* (1895) 357-.
- doubly periodic. *Kahl*, E. *Grunert Arch.* 19 (1852) 158-.
- for  $e$ . *Hurwitz*, —. *Königsb. Schr.* 32 (1891) (Sb.) 59-.
- , —, and  $e^a$ . *Sundman*, K. F. *Helsingf. Öfv.* 38 (1896) 57-.
- ,  $e^{(a)}$ . *Laguerre*, E. *Liouv. J. Mth.* 6 (1890) 99-.
- $e^{a-1}(\frac{1}{2})$ . *Laguerre*, E. *Par. S. Mth. Bll.* 5 (1877) 95-.
- Eisenstein's. *Muir*, T. [1877] *Edinb. R. S. T.* 28 (1879) 135-.
- equal. *Heilermann*, —. *Schlömilch Z.* 5 (1860) 362-.
- Euler's; and Wallis's theorem. *Bauer*, G. [1872] *Münch. Ab.* 11 (1879) (Ab. 2) 97-.
- expansion in series by means of. *Chebuishev*, P. L. [1865] (xn) *Rec. Mth. (Moscou)* [1] (1866) 291-.
- forms of numbers determined by. *Roberts*, S. [1878] *L. Mth. S. P.* 10 (1878-79) 29-.

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- for fraction  $1.3.5 \dots (2n-1)/2.4.6 \dots 2n$ . *Stieltjes*, —. *QJ. Mth.* 25 (1891) 198-.
- , function  $(1+x)^n$ . *Padé*, H. C. R. 129 (1899) 753-; 875-.
- Gauss's theorems, proof. *Clausen*, T. *Crelle J.* 3 (1828) 311.
- generalisation. *Lejeune-Dirichlet*, G. *Berl. B.* (1842) 93-.
- , *Jacobi*, C. G. J. *Crelle J.* 69 (1868) 29-.
- , (Jacobi). *Bachmann*, P. [1872] *Crelle J.* 75 (1878) 25-.
- , *Poincaré*, H. C. R. 99 (1884) 1014-.
- , *Minkowski*, H. *Par. Éc. Norm. A.* 13 (1896) 41-.
- geometric application. *Léger*, É. *Quetelet Cor. Mth.* 9 (1837) 483-.
- , interpretation. *Lieblein*, J. Z. *Mth. Ps.* 12 (1867) 185-.
- indefinite, transformation to vulgar fractions. *Pezzi*, F. *Mod. S. It. Mm.* 11 (1804) 410-.
- infinite. *Schultén*, N. G. af (fil.) [1844-47] *Helsingf. Acta* 2 (1847) 661-; 3 (1852) 427-.
- , *Spitzer*, S. *Grunert Arch.* 33 (1859) 418-.
- , *Studnička*, F. J. *Prag Sb.* (1892) (*Mth. Nt.*) 254-; *Časopis* 22 (1893) 15-.
- , convergence. *Pringsheim*, A. *Münch. Ak. Sb.* 28 (1899) 295-; 30 (1901) 233.
- , evaluation. *Spitzer*, S. *Grunert Arch.* 30 (1858) 331-; 33 (1859) 474-.
- for infinite series. *Buzengeiger*, K. H. J. *Zach M. Cor.* 22 (1810) 513-.
- , —, *Muir*, T. *Edinb. R. S. T.* 27 (1876) 467-.
- , irrational numbers. *Gylden*, H. C. R. 106 (1888) 1584-; 1777-.
- ,  $\int_{-1}^{+1} e^{-x} dx$ . *Jacobi*, C. G. J. *Crelle J.* 12 (1834) 346-.
- Jacobi's formula
- $$\frac{d^n (1-x^2)^{n+1}}{dx^n} = C \sin [(n+1) \cos^{-1} x].$$
- Hermite*, C. [1875] *Liège S. Sc. Mm.* 6 (1877) No. 7, 7 pp.
- law of formation. *Günther*, S. [1875] *Wien Ak. D.* 36 (1876) (Ab. 2) 187-.
- for  $n$ th roots. *Seeling*, P. *Arch. Mth. Ps.* 46 (1866) 80-.
- for  $n$ th surds. *Hoffmann*, K. E. *Arch. Mth. Ps.* 64 (1879) 9-.
- with negative quotients. *Saalschütz*, L. *Crelle J. Mth.* 120 (1899) 132-; 242-; 354.
- negative, for square roots. *Stern*, M. A. [1864] *Gött. Ab.* 12 (1866) 48 pp.
- numerical values. *Glaisher*, J. W. L. [1874] *QJ. Mth.* 13 (1875) 255-.
- periodic. *Kramp*, C. *Gergonne A. Mth.* 1 (1810-11) 261-; 319-.
- , *Galois*, E. *Gergonne A. Mth.* 19 (1828-29) 294-.
- , *Lebesgue*, V. A. *Férussac Bll. Sc. Mth.* 15 (1831) 155-.
- , *Ramus*, C. *Kiöb. Ov.* (1856-57) 1-;
- Kjøb. Dn. Vd. Selsk. Afh.* 7 (1838) 197-; *Crelle J.* 20 (1840) 13-.
- , *Broager*, P. D. *Kjøb. Dn. Vd. Selsk. Afh.* 8 (1841) 145-.

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- periodic. *Bianchi, G.* [1844] *Mod. Mm. S. It.* 23 (1846) 219-.
- , *Rodrigues, O. N. A. Mth.* 4 (1845) 109-.
- , *Catalan, E. C. N. A. Mth.* 4 (1845) 126-.
- , *Galois, E. Liouv. J. Mth.* 11 (1846) 385-.
- , *Siebeck, H. Crelle J.* 33 (1846) 68-.
- , *Le François, (Prof.)* —. *Brux. Ac. Bll.* 16 (1849) 338-.
- , *Stern, M. A.* [1854] *Crelle J.* 53 (1857) 1-.
- , *Simon, O. E. Grunert Arch.* 33 (1859) 448-.
- , *Günther, S. Z. Mth. Ps.* 22 (1877) 31-.
- , *Le Paige, C. M. M. H. H. Brux. Ac. Bll.* 43 (1877) 337-.
- , *Appell, P. Arch. Mth. Ps.* 62 (1878) 183-.
- , *Jonquière, E. de. C. R.* 96 (1883) 568-1297-.
- , *Muir, T. Edinb. R. S. P.* 12 (1884) 389-578-.
- , *Selivanov, D. T. Rec. Mth. (Moscou)* 15 (1891) 635-; *Fachr. Mth.* (1891) 221-.
- , *Landsberg, G. Crelle J. Mth.* 109 (1892) 231-.
- , (Landsberg). *Netto, E. Crelle J. Mth.* 110 (1892) 349-.
- , algebraic. *Bortolotti, E. Palermo Cir. Mt. Rd.* 9 (1895) 136-.
- , —, generalisation. *Bortolotti, E. Palermo Cir. Mt. Rd.* 6 (1892) 1-.
- , arithmetical theorem. *Sylvester, J. J. Mess. Mth.* 19 (1890) 63-.
- , calculation. *Anon.* (vi 552) *Gergonne A. Mth.* 14 (1823-24) 337-.
- , closed form. *Hoffmann, K. E. Arch. Mth. Ps.* 62 (1878) 310-.
- , composition of periods. *Jonquière, E. de. C. R.* 96 (1883) 694-832-.
- , convergence. *Thiele, T. N. (xii) Ts. Mth.* 3 (1879) 70-.
- , —, *Stolz, —. Innsb. Nt. Md. B.* 15 (1886) xxi-; 17 (1887) xviii-.
- , —, *Pringsheim, A.* [1900] *Münch. Ak. Sb.* 30 (1901) 463-.
- , convergents. *Oettinger, L. Arch. Mth. Ps.* 43 (1865) 301-.
- , —, (Oettinger). *Strehlike, F. Arch. Mth. Ps.* 48 (1868) 1-.
- , —, *Ocagne, M. d'. C. R.* 108 (1889) 499-.
- , equivalent to square-roots of integers. *Ely, G. S. A. Mth.* 1 (1884-85) 72-.
- , given number of quotients. *Seeling, P. Arch. Mth. Ps.* 49 (1869) 4-.
- , identities between convergents. *Jonquière, E. de. C. R.* 96 (1883) 1351-1420-1490-1571-1721-.
- , and indeterminate analysis. *Tédénat, —. Gard Not. Tr. Ac.* (1811) 254-.
- , nth convergent. *Strehlike, F. Arch. Mth. Ps.* 42 (1864) 843-.
- , with one term. *Clausen, T. Crelle J.* 3 (1828) 87-; *N. A. Mth.* 5 (1846) 203-.
- , —, symmetric period. *Musso, G. G. Mt.* 33 (1895) 1-.

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- for  $\pi$ . *Sylvester, J. J. Ph. Mg.* 37 (1869) 873-.
- , —, *Jung, V. Časopis* 9 (\*1880) 157-; *Fachr. Mth.* (\*1880) 149-.
- , —, Sylvester's and other forms. *Muir, T. Ph. Mg.* 47 (1874) 331-.
- primes of form  $4\lambda+1$ , as sum of 2 squares. *Smith, H. J. S. Crelle J.* 50 (1855) 91-.
- probability of large quotients. *Gylden, H. Stockh. Öfv.* (1888) 349-.
- problem. *Clausen, T. St Pét. Ac. Sc. Bll.* 9 (1851) 353-.
- for quadratic surds. *Anon.* (vi 551) *Gergonne A. Mth.* 14 (1823-24) 324-.
- , —, *Schultén, N. G. af (fil.)* [1846-47] *Helsingf. Acta* 2 (1847) 1023-; 3 (1852) 435-.
- , —, *Schaar, M. Brux. Ac. Bll.* 19 (1852) 16-.
- , —, *Hoffmann, K. E. Arch. Mth. Ps.* 64 (1879) 1-.
- , —, *Hansted, B. G. Teix. J. Sc.* 2 (1880) 154-.
- , —, *Sylvester, J. J. C. R.* 108 (1889) 1037-1084-.
- , —, *Dolbina, J. N. A. Mth.* 10 (1891) 134-.
- , —, *Boutin, A. Mathesis* 17 (1897) 8-.
- , —, *Crelle, —. C. R.* 128 (1899) 229-.
- , —, convergence. *Falk, M. Ts. Mt. Fys.* 4 (1871) 249-.
- , —, periodicity. *Schultén, N. G. af (fil.)* [1846] *Helsingf. Acta* 2 (1847) 1063-.
- , —, —, *Charves, —. Bll. Sc. Mth. As.* 1 (1877) 41-.
- quotients in arithmetical progression. *Hurwitz, A. Zür. Vjschr.* 41 (1896) (*Festschr.*, Th. 2) 34-.
- for rational fractional power. *Matthiessen, L. Z. Mth. Ps.* 10 (1865) 315-.
- reduction to series. *De Morgan, A. Ph. Mg.* 24 (1844) 15-.
- , —, *Heilermann, —. Crelle J.* 46 (1853) 88-.
- regular. *Gegenbauer, L. Wien Ak. D.* 58 (1891) 177-; *Mh. Mth. Ps.* 6 (1895) 209-.
- relation to astronomical cycles. *Brunel, —. Bordeaux S. Sc. Mm.* 5 (1890) xxv-.
- , —, —, *Tannery, P. Bordeaux S. Sc. Mm.* 5 (1890) xxix-.
- representation as definite integrals. *Spitzer, S. Grunert Arch.* 30 (1858) 81-.
- , of numbers. *Schultén, N. G. af (fil.)* [1845] *Helsingf. Acta* 2 (1847) 1009-.
- for roots. *Collins, E. (vn) St. Pét. Ac. Sc. Bll.* 7 (1840) 357-.
- , —, of equations. *Montessus, R. de. Brux. S. Sc. A.* 21 (1897) (*Pt.* 2) 71-.
- , —, numbers. *C. Camb. Mth. J.* 3 (1843) 120-.
- roots and their convergence. *Doppler, C. Wien Jb. Pol. I.* 17 (1832) 175-.
- for series. *Kausler, C. F.* [1802] *St Pét. Ac. Sc. Mm.* 1 (1809) 156-.
- , —, *Viscovatoff, B.* [1802] *St Pet. Ac. Sc. N. Acta* 15 (1806) 181-.
- , —, *Schubert, F. T.* [1815] *St Pét. Ac. Sc. Mm.* 7 (1820) 189-.

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- for series. *Eytelwein*, J. A. Berl. Ab. (1820-21) 15-.
- *Le Barbier*, —. Gergonne A. Mth. 21 (1830-31) 262-.
- *Heine*, H. E. Crelle J. 32 (1846) 205-.
- *Heilermann*, —. Crelle J. 33 (1846) 174-.
- *Hankel*, H. Leip. B. 14 (1862) 17-.
- *Broman*, K. E. Ts. Mt. Fys. 4 (1871) 139-.
- *Mollame*, V. [1882] Catania Ac. Gioen. At. 17 (1883) 129-.
- *Gamboli*, D. Bologna Rd. (1890-91) 43-.
- *Čebyšev*, P. St. Pet. Ac. Sc. Mm. (R.) 64 (1891) (Suppl.) No. 7, 67 pp.
- and similar functions. *Meyer*, F. Königsb. Schr. 38 (1897) [57]-.
- simple, convergence. *Padé*, H. C. R. 112 (1891) 989-.
- solution of continued fraction equation. *Mollame*, V. Rv. Mt. 2 (1892) 212-.
- for solution of linear differential equation. *Laguerre*, E. [1878-79] C. R. 87 (1878) 923-; Par. S. Mth. Bl. 8 (1880) 21-.
- square roots. *Ivory*, J. [1800] Edinb. R. S. T. 5 (1805) 20-.
- *Booth*, J. Camb. Mth. J. 2 (1841) 226-.
- *De Morgan*, A. (vi Add.) Camb. Mth. J. 2 (1841) 239-.
- *Schlömilch*, O. Grunert Arch. 6 (1845) 147-.
- (Schlömilch). *Müller*, R. Grunert Arch. 6 (1845) 151-.
- *Arndt*, F. Crelle J. 31 (1846) 343-; Grunert Arch. 12 (1849) 211-.
- *Serret*, J. A. Liouv. J. Mth. 12 (1847) 518-.
- *Badon-Ghiben*, J. [1864] Amst. Vs. Ak. 17 (1865) (Ntk.) 121-.
- *Weyr*, Emil. Prag Sb. (1869) 18-.
- *Schlömilch*, O. Z. Mth. Ps. 17 (1872) 70-.
- *Weyr*, Ed. Prag Sb. (1877) 65-.
- *Hermes*, J. [1879] Arch. Mth. Ps. 65 (1880) 438-.
- *Günther*, S. [1882] Bordeaux S. Sc. Mm. 5 (1883) 91-.
- *Muir*, T. Mess. Mth. 14 (1885) 115-.
- *Thaarup*, F. N. Ts. Mth. 11 (A) (1900) 33-.
- , and factors. *Kausler*, C. F. [1907] St Pét. Ac. Sc. Mm. 2 (1810) 95-.
- , periodicity. *Crelle*, L. Arch. Sc. Ps. Nt. 6 (1898) 366-.
- “step” fractions. *Gohierre de Longchamps*, —. G. Mt. 15 (1877) 299-.
- successive approximations. *De Morgan*, A. Camb. Mth. J. 4 (1845) 97-.
- summation. *Stern*, M. A. Crelle J. 8 (1832) 42-.
- of series by. *Horner*, W. G. Thomson A. Ph. 11 (1826) 416-; 12 (1826) 48-.
- symmetric, convergents. *Musso*, G. N. A. Mth. 14 (1895) 70-.
- in “Theoria Motus,” pp. 97-98. *Ramus*, C. Mth. Ts. 1 (1859) 129-.

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- — — — —, *Novi, G.* Tortolini A. 1 (1850) 517-.
- — — — —, *Schlämilch, O.* Liouv. J. Mth. 8 (1863) 99-.
- — — — —, general. *Boole, G.* Camb. and Dubl. Mth. J. 3 (1848) 112-.
- — — — —, into isotropic means. *Cauchy, A. L.* C. B. 34 (1852) 159-; 43 (1856) 261-.
- — — — —, by substitution. *Collins, E.* [1826] St Pét. Ac. Sc. Mm. 1 (1831) 181-.
- — — — —, and simplification, methods by interpolation. *Richelmy, P.* [1855] Tor. Mm. Ac. 17 (1858) 245-.
- Weierstrass's function,  $f(x) = \sum_{n=0}^{\infty} b^n \cos(a^n x \pi)$ . *Wiener, L. C.* Crelle J. Mth. 90 (1881) 221-.
- $z = f(x, y)$ , graphic representation. *Lalanne, L.* Par. S. Phlm. PV. (1843) 71-.
- $f(x)f(x+1) \dots f(x+h)$ , value. *Gasparis, A. de.* Nap. Rd. 1 (1852) 199-.
- $F(x, y)$ , when a function of  $\phi(x, y)$ , con- ditions. *Dienger, J.* Grunert Arch. 21 (1853) 219-.
- $f(x)$ , Wronski's expansion. *Echols, W. H.* N. Y. Mth. S. Bll. 2 (1898) 178-.

### 3220 Infinite series; infinite products and other infinite processes. (See also 5610, 5620.)

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- Fontana, G. Verona S. It. Mm. 2 (1784) 386-.
- Paoli, P. Verona S. It. Mm. 4 (1788) 429-.
- Parseval, M. A. [1799] Par. Mm. Sav. Étr. 1 (1806) 638-.
- Bianchi, G. [1844] Mod. Mm. S. It. 23 (1846) 239-.
- Malmsten, C. J. Crelle J. 38 (1849) 1-.
- Dienger, J. Crelle J. 38 (1849) 266-, 331-.
- Tremoli, —. N. A. Mth. 9 (1850) 66.
- Björling, E. G. Stockh. Öfv. 10 (1858) 147-.
- Schlömilch, O. Schlömilch Z. 1 (1856) 180-; 5 (1860) 132-.
- Kinkelin, H. Bern Mt. (1858) 88-.
- Greer, H. R. QJ. Mth. 3 (1860) 262-, 370-.
- Isely, M. Neuch. Bl. 6 (1861-63) 356-.
- Cockle, Jas. [1863] (iv) Mess. Mth. 2 (1864) 196-.
- Lindman, C. F. Arch. Mth. Pa. 50 (1869) 219-.
- Enneper, A. Z. Mth. Ps. 15 (1870) 47-.
- Schlömilch, O. X. Leip. Mth. Ps. B. 29 (1877) 101-.
- Barbour, L. G. Des Moines Anal. 8 (1881) 191-.
- West, É. Liouv. J. Mth. 7 (1881) 111-.
- Catalan, E. C. Liège S. Sc. Mm. 12 (1885) No. 2, 148-, 152-, 206-, 282-, 294-.
- Cesáro, E. G. Teix. J. Sc. 7 (1886) 171-; 8 (1887) 15-.
- Biehler, C. N. A. Mth. 6 (1887) 248-.
- Gutzmer, A. G. Teix. J. Sc. 8 (1887) 81-.
- Studnička, F. J. Časopis 16 (1887) 81-; Föchr. Mth. (1887) 227.
- Weyr, E. G. Teix. J. Sc. 8 (1887) 97-.
- Catalan, E. Brux. Ac. Bl. 18 (1889) 41-.
- Tauber, A. Mh. Mth. Ps. 8 (1897) 278-.
- Absolutely summable series, series ( $M$ ) and analytical continuation. Borel, É. O. R. 181 (1900) 830-.
- Algebraic series. Sidler, G. Zür. Vjschr. 1 (1856) 180-; Bern Mt. (1899) 18-.
- , new. Wallace, J. Silliman J. 7 (1824) 278-; 9 (1825) 98-.
- , — (Wallace). B. (vi Adds.) Silliman J. 8 (1824) 131-; 9 (1825) 293-.
- Analytic series. Swanberg, J. Stockh. Ak. Hndl. 22 (1801) 30-.
- , —, genetic explanation. Barfuss, F. W. Grunert Arch. 8 (1846) 387-.
- Applications to arithmetic. Sardí, C. G. Mt. 7 (1869) 257-.
- Approximation to geometric means by series of arithmetical and harmonic means. Mathieu, J. J. A. N. A. Mth. 18 (1879) 529-.
- series. Meyer, A. N. Ts. Mth. 5 (B) (1894) 81-; 6 (B) (1895) 41-, 78-; Föchr. Mth. (1893-94) 241.
- Approximations and series. Houseau, J. C. Brux. Ac. Bl. 41 (1876) 961-.

- Asymptotic values of certain series. Le Roy, É. Bl. Sc. Mth. 24 (1900) 245-.
- , —, infinite approximations, and order of infinity in solution of equations. Du Bois-Reymond, P. Mth. A. 8 (1875) 363-, 574-.
- Bernoulli's functions. Baraniecki, M. A. Krk. Ak. (Mt.-Prz.) Rz. 13 (1886) 183-; Föchr. Mth. (1885) 416.
- Binet's series, and products of a large number of factors. Gilbert, P. Brux. S. Sc. A. 10 (1886) (Pt. 2) 191-.

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- Burg, A. Crelle J. 1 (1826) 367-; Wien Jb. Pol. I. 16 (1830) 171-.
- De Morgan, A. Camb. Mth. J. 3 (1843) 61-.
- Barfuss, F. W. Grunert Arch. 5 (1844) 155-; 7 (1846) 3-; 8 (1846) 387-.
- (Barfuss.) Schlömilch, O. Grunert Arch. 5 (1844) 437-; 10 (1847) 321-.
- Bianchi, G. [1844] Mod. Mm. S. It. 23 (1846) 239-.
- Terquem, O. N. A. Mth. 9 (1850) 459-.
- Heine, H. E. Crelle J. 55 (1858) 279-.
- Hinricks, G. Mth. Ts. 2 (1860) 38-.
- Janni, V. G. Mt. 12 (1874) 229-, 312.
- Lanza, G. Des Moines Anal. 1 (1874) 177-.
- Gohierre de Longchamps, —. N. A. Mth. 17 (1878) 101-.
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- , Knight, T. Phil. Trans. (1816) 331-; (1817) 245-.
- , Herapath, J. Thomson A. Ph. 18 (1819) 365-.
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- , Colburn, W. Bost. J. Ph. 2 (1825) 474-.
- , Strong, T. Silliman J. 12 (1827) 182-.
- , Crelle, A. L. Crelle J. 4 (1829) 305-; 5 (1830) 187-.
- , Cerquero, J. S. Quetelet Cor. Mth. 10 (1838) 202-.
- , Roche, —. N. A. Mth. 1 (1842) 42-, 118-.
- , Cox, H. Camb. and Dubl. Mth. J. 7 (1852) 98-.
- , Paque, A. Liège Mm. S. Sc. 10 (1855) 1-.
- , Macnie, J. Des Moines Anal. 7 (1880) 190-.
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- or negative index, demonstration. *Anon.* (vi 1170) Thomson A. Ph. 7 (1816) 846-.
- — — — — *Rodrigues, O.* Liouv. J. Mth. 3 (1838) 550-.
- — — — — Euler's demonstration. *Muirhead, R. F.* Edinb. Mth. S. P. 17 (1899) 88-.
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- — — — — historical note. *Terquem, O.* N. A. Mth. 6 (1847) 85-.
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- Binet, J. P. M.* Liouv. J. Mth. 6 (1841) 495-.
- Cauchy, A. L.* C. R. 19 (1844) 141-., 157.
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- Schultén, N. G. af (fil.)* [1844] Helsingf. Acta 2 (1847) 733-.
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- Malmsten, C. J.* Grunert Arch. 8 (1846) 419-.
- Terquem, O.* N. A. Mth. 5 (1846) 101-.
- Timmermans, J. A.* Brux. Ac. Bil. 13 (1846) 140-.
- Schaar, M.* Brux. Mm. Cour. 4°, 22 (1846-47) 9 pp.
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- Kinkelin, H.* Bern Mt. (1858) 57-.
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- (*Cesáro.*) *Jensen, J. L. W. V.* C. R. 106 (1888) 1520-.
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- Cahen, E.* N. A. Mth. 10 (1891) 458-.
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- Bryant, R.* [1895] L. Mth. S. P. 27 (1896) 69-.
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- Sincov, D. M.* Rec. Mth. (Moscou) 20 (1899) 616-; *Fachr. Mth.* (1899) 228.
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- , connection. *Zahradnik, K.* *Časopis* 7 (\*1878) 91-; *Fachr. Mth.* (\*1878) 176.
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- and divergence. *Burg, A.* *Wien Jb. Pol. I.* 17 (1882) 112-.
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- *Dienger, J.* Grunert Arch. 11 (1848) 38.
- *Lerch, —.* G. Teix. J. Sc. 11 (1892) 107-.
- Diminishing series with alternating signs. *Oltramare, G.* Crelle J. 45 (1853) 345-.
- Dirichlet's paradox. *Unferdinger, F.* [1868-69] Wien Sb. 57 (1868) (Ab. 2) 621-; 60 (1870) (Ab. 2) 591-.
- *Schlömilch, O.* Z. Mth. Ps. 15 (1870) 134-.
- series. *Lerch, —.* C. R. 128 (1899) 1310-.
- multiplication and non-vanishing. *Mertens, F.* Crelle J. Mth. 117 (1897) 169-.
- theory. *Pringsheim, A.* Mth. A. 37 (1890) 38-.
- Discontinuity. *Schlömilch, O.* Schlömilch Z. 4 (1859) 161-.
- of values, tests. *Duhamel, J. M. C.* Liouv. J. Mth. 19 (1854) 112-.
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- Riemann's. *Smith, H. J. S.* [1881] Mess. Mth. 11 (1882) 1-.
- Distribution of signs in a series. *Cesáro, E.* Rm. R. Ac. Linc. Rd. 4 (1888) (Sem. 2) 133-.
- Divergence of a series. *Unferdinger, F.* Wien Sb. 55 (1867) (Ab. 2) 95-.
- Divergent series. *De Morgan, A.* [1844] Camb. Ph. S. T. 8 (1849) 182-.
- *Young, J. R.* B. A. Rp. (1844) (Pt. 2) 1.
- *Catalan, E. C.* N. A. Mth. 17 (1859) 195-.



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- Divergent series. *Chessin, A. S.* [1895] *N. Y. Am. Mth. S. Bll.* 2 (1896) 72-, 177-.
- , *Borel, É.* *Par. Ec. Norm. A.* 16 (1899) 9-.
- , (Borel's formulæ). *Kluyver, J. C.* *Amst. Ak. Vs.* 8 (1900) 331-; *Amst. Ak. P.* 2 (1900) 302-.
- , *Servant, M.* *Toul. Fac. Sc. A.* 1 (1899) 117-.
- , *Le Roy, É.* *C. R.* 180 (1900) 1293-, 1535-.
- , comparison. *Cesáro, E.* *Rm. R. Ac. Linc. Rd.* 4 (1888) (*Sem.* 1) 115-.
- , discontinuity of arbitrary constants. *Stokes, G. G.* [1857-68] *Ph. Mg.* 16 (1858) 71-; *Camb. Ph. S. T.* 10 (1864) 105-; 11 (*Pt.* 2) (1869) 412-.
- , and errors connected therewith. *Young, J. R.* *Ir. Ac. P.* 3 (1847) 27-.
- , functions defined by Taylor's series. *Le Roy, É.* *C. R.* 127 (1898) 654-; 128 (1899) 492-; *Toul. Fac. Sc. A.* 2 (1900) 317-.
- , legitimate use. *Cauchy, A. L.* *C. R.* 17 (1848) 370-.
- , with positive terms. *Appell, P.* *Arch. Mth. Ps.* 64 (1879) 387-.
- , possibility of defining function by. *Padé, H.* *C. R.* 116 (1893) 686-.
- , significance, values, etc. *Prehn, —.* *Crelle J.* 41 (1851) 1-, 364-.
- , sums. *Hoppe, R.* [1867] *Ups. N. Acta S. Sc.* 6 (1868) No. 7, 12 pp.
- , summable series. *Oldenburg, H.* [1897] *Stockh. Öfv.* (1898) 157-.
- , extension of Abel's theorem to, and generalisation of notion of limit. *Borel, É.* *C. R.* 122 (1896) 73-.
- , theory, applications. *Borel, É.* *C. R.* 122 (1896) 805-.
- , —, bases. *Borel, É.* *Liouv. J. Mth.* 2 (1896) 108-.
- Division. *Hagen, J.* *Am. J. Mth.* 5 (1882) 236-.
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- , *Schömilch, O.* *Z. Mth. Ps.* 11 (1866) 426-.
- , *Stolz, O.* *Mth. A.* 24 (1884) 157-.
- , case. *Catalan, E. C.* *Brux. Ac. Bll.* 5 (1883) 709-.
- , elementary theory. *Pringsheim, A.* *Münch. Ak. Sb.* 27 (1898) 101-.
- , of Kronecker's. *Lerch, M.* *Prag Sb.* (1898) (*Mth.-Nt.*) No. 9, 17 pp.
- , and products. *Biermann, O.* *Mh. Mth. Ps.* 8 (1897) 115-.
- , sequences. *London, F.* *Mth. A.* 53 (1900) 322-.
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- , sequences of numbers. *Pringsheim, A.* *Mth. A.* 53 (1900) 289-.
- , series, case. *Cayley, A.* *Camb. and Dubl. Mth. J.* 6 (1851) 45-.
- , transformation. *Brioschi, F.* *Tortolini A.* 7 (1856) 214-.

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- , theory deduced from principle of indeterminate coefficients. *Oliveira, C. B.* *Bv. Brasil.* 3 (1860) 194-.
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- Cauchy, A. L.* *Par. S. Phlm. Bll.* (1822) 49-.
- Paoli, P.* *Mod. S. It. Mm.* 20 (1828) 298-.
- Collins, E.* [1828-31] *St Pét. Ac. Sc. Mm.* 2 (1833) 19-, 195-.
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- Cauchy, A. L.* *Férussac Bll. Sc. Mth.* 16 (1831) 119-.
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- Gordon, J.* *Ph. Mg.* 9 (1831) 253-.
- Liouville, J.* *Liouv. J. Mth.* 3 (1838) 561-.
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- Dienger, J.* *Grunert Arch.* 7 (1846) 480-; 8 (1846) 450-.
- Brassinne, E.* *Toul. Mm. Ac.* 2 (1852) 300-.
- Faà de Bruno, F.* *Tortolini A.* 6 (1855) 479-.
- Friesach, K.* *Wien SB.* 47 (*Ab.* 2) (1863) 264-.
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- Echols, W. H.* *Am. J. Mth.* 15 (1898) 316-.
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- of algebraic functions. *Eisenstein, G.* *Berl. B.* (1852) 441-.
- , (Eisenstein). *Heine, H. E.* *Crelle J.* 45 (1853) 285-.
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- , analytic functions. *Tadini, A.* *Mil. G. S. Inc.* 7 (1809) 63-; 8 (1809) 236-.
- , —, *Pincherle, S.* *Bologna Ac. Sc. Mm.* 3 (1881) 151-; *Mil. I. Lomb. Rd.* 15 (1882) 224-.
- analytic researches. *Sarrus, F.* *Gergonne A. Mth.* 10 (1819-20) 245-.
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- *Dienger, J.* Grunert Arch. 31 (1858) 274-.
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- *Walton, W.* [1868] QJ. Mth. 10 (1870) 87-.
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- in continued fractions, functions arising from. *Markov, A.* [1893] St Pet. Ac. Sc. Mm. (Rs.) 74 (1894) (*Suppl.*) No. 2, 30 pp.; *Fschr. Mth.* (1893-94) 830.
- of continuous functions. *Sonine, N. J.* Mth. A. 16 (1880) 1-.
- Eisenstein's relation for coefficients in polynomial expansion, proof. *Moreno, G. G.* Mt. 16 (1878) 174-.
- elementary expansion. *Davies, T. S.* Mathematician 1 (1845) 5-.
- formula, general. *Echols, W. H.* N. Y. Mth. S. Bll. 2 (1893) 135-.
- formulæ. *Cauchy, A. L.* C. R. 19 (1844) 1194-, 1331-.
- *Trudi, N.* Nap. Rd. 1 (1862) 135-.
- of four functions. *Meyer, A.* Brux. Ac. Sc. Mm. 21 (1848) 23 pp.
- function of binomial. [*Greatheed, S. S.* non *Gregory, D. F.*] ff. Camb. Mth. J. 1 (1839) 67-.
- functions of multinomials. *Knight, T.* [1810] Phil. Trans. (1811) 49-.
- — — one variable. *Jouvin, —.* Gard Mm. Ac. (1852-53) 381-.
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- — — *Darboux, G.* Liouv. J. Mth. 2 (1876) 291-.
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- — — several variables. *Hermite, C.* C. R. 60 (1865) 370-, 432-, 461-, 512-.
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- principle, general. *Schlömilch, O.* Schlömilch Z. 2 (1857) 289-.
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- — — *Lerch, M.* Prag České Ak. Fr. Jos. R. (Třída 2) 5 (1896) Art. 18, 6 pp.; *Fachr. Mth.* (1896) 207.
- — —, general form. *Sonin, N. Ja.* [1891] Vars. S. Nt. Tr. (1891-92) (C. R., Ps. C.) No. 4, 2-.
- and summation, cases. *Winckler, A.* Wien Ak. Sb. 64 (1871) (Ab. 2) 799-.
- symbolic versus operative, case. *Hathaway, A. S.* Des Moines Anal. 5 (1878) 38-.
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- , general. *Schlömilch, O.* Grunert Arch. 3 (1843) 400-.
- theorems. *Faà de Bruno, F.* [1880] Crelle J. Mth. 90 (1881) 186-.
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- $f(y) - f(x)$ , in powers of  $y - x$ . *Levänen, S.* Helsingf. Öfv. 17 (1875) 1-.
- $F(x)$ , expansion of derivatives in powers of index of derivative. *Grünwald, A. C.* Prag Sb. (1880) 276-; Prag Ab. (1882) No. 2, 63 pp.
- of  $(\sum a_n x^n)^{-1}$  ( $a_0=1$ ), in powers of  $x$ . *Gambioli, D.* [1891] Bologna Rd. (1891-92) 39-.

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- *Simon, H.* Arch. Mth. Ps. 8 (1890) 118-; 9 (1890) vii.
- —, properties, with table. *Hill, C. J. D.* Lund. Acta Un. 3 (1866) (Mth.) No. 1, 16 pp.
- — and Stirling's formula. *Mansion, P.* (xii) Mathesis 1 (1881) 169-.
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- — — on circle of convergence. *Hölder, O.* Mth. A. 20 (1882) 535-.
- — — for infinite values of variables, cases. *Denzler, W.* Zür. Vjschr. 1 (1856) 833-.
- Mixed periodic series. *Oltramare, G.* Gen. I. Nt. Mm. 5 (1857) 1-.
- series. *Studnicka, F. J.* Prag Sb. (1892) (Mth.-Nt.) 98-.
- Moduli of series. *Cauchy, A. L.* C. R. 17 (1843) 1220-.
- Multiple and divergent series, formulae resulting from. *Cauchy, A. L.* C. R. 20 (1845) 329-.
- — modular series. *Cauchy, A. L.* C. R. 19 (1844) 1875-.
- valued series. *De Morgan, A.* [1836] Camb. Ph. S. T. 6 (1838) 185-.
- Multiplication. *Cesáro, E.* Bll. Sc. Mth. 14 (1890) 114-.
- *Cajori, F.* N. Y. Mth. S. Bll. 1 (1892) 184-.
- of two series. *Stieltjes, T. J.* N. A. Mth. 6 (1887) 210-.
- — —, rule for. *Mertens, F.* Crelle J. Mth. 79 (1875) 182-.
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- —, theorem. *De Morgan, A.* [1864-68] Camb. Ph. S. T. 11 (1871) 190-, 289-, 447-.
- New class. *Babbage, C.* [1824] Camb. Ph. S. T. 2 (1827) 218-.
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- Paradox. *Glaisher, J. W. L.* [1871] Mess. Mth. 1 (1872) 97-.
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- Power of a series. *Caldarera, G.* Acireale Ac. At. 5 (1894) (Sc.) 1-.

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- Appell, P.* C. R. 87 (1878) 689-.
- Kronecker, L.* Berl. Ak. Mb. (1878) 58-.
- Stieltjes, —.* C. R. 103 (1886) 1243-.
- Tognoli, O.* G. Mt. 25 (1887) 155-.
- Pincherle, S.* A. Mt. 21 (1893) 138-.
- Vivanti, G.* A. Mt. 21 (1893) 198-.
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- Pusyna, J.* Krk. Ak. (Mt.-Prz.) Rz. 11 (1897) 270-; Orc. Ac. Sc. Bll. (1896) 295-.
- abbreviated, expansion. *Jordan, W.* As. Nr. 85 (1875) 73-.
- always divergent. *Pincherle, S.* C. B. 128 (1899) 407-.
- and arithmetical series of  $r$ th rank, combination. *Mildner, R.* Wien Ak. Sb. 87 (1883) (Ab. 2) 532-.
- ascending. *André, D.* Par. Éc. Norm. A. 12 (1883) 287-.
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$\int_0^\pi \log(1 - 2a \cos x + a^2) dx$ . *Delaunay, C.* Liouv. J. Mth. 3 (1838) 355-.

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$\int_0^{\infty} \frac{x^{a-1}}{1+x} dx$ . *Bonnet, O. Liouv. J. Mth. 6* (1841) 288-.

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$\int_0^{\infty} \frac{(1-p \cos tx) \phi(x) dx}{1-2p \cos tx + p^2}$

and  $\int_0^{\infty} \frac{p \sin txf(x) dx}{1-2p \cos tx + p^2}$ .

*Malmsten, C. J. Ups. N. Acta S. Sc. 12* (1844) 155-.

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- $\int_0^{2\pi} \sin^2 x \cos^2 x \frac{\sin mx}{\cos mx} \, dx$ , integration. Stodnicka, F. J. Časopis 23 (1894) 67-; Fachr. Mth. (1893-94) 481.
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- of 2nd kind in theory of algebraic surfaces. *Picard, É.* [1897] Liouv. J. Mth. 5 (1899) 5-.
- maxima and minima. *Kobb, G.* Stockh. Öfv. (1890) 385-; Fsch. Mth. (1890) 382; Acta Mth. 16 (1892-93) 65-; 17 (1893) 321-.
- and their periods, elementary theory. *Marie, M.* C. R. 75 (1872) 576-, 614-, 660-.
- Poisson's theorem, proof. *Roberts, W.* Liouv. J. Mth. 11 (1846) 210-.
- properties. *Rodrigues, (Dr) —.* Par. S. Phlm. Bll. (1815) 34-.
- of rational functions, residues. *Picard, É.* C. R. 124 (1897) 433-.
- reduction, and new invariant in theory of algebraic surfaces. *Picard, É.* C. R. 126 (1898) 297-.
- to products of simple integrals. *Schlömilch, O.* Z. Mth. Ps. 9 (1864) 305-.
- — quadratures. *Winckler, A.* [1851] Crelle J. 45 (1853) 102-.
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- , theory. *Marie, M.* C. R. 75 (1872) 695-, 751-.
- returning to same form after transformation of variables. *Jacobi, C. G. J.* Crelle J. 15 (1836) 193-.
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- , Green's and Cauchy's theorems. *Pringsheim, A.* Münch. Ak. Sb. 29 (1900) 89-, 268-.
- and invariant of two triangles. *Le Roux, —.* Par. S. Mth. Bll. 28 (1900) 168-.
- transformation. *Jacobi, C. G. J.* [1827-32] Crelle J. 2 (1827) 234-; 8 (1832) 253-, 321-; 10 (1833) 101-.

- transformation. *Cayley, A.* *Mess. Mth.* 4 (1875) 92-.
- , *Berger, A.* *Stockh. Öfv.* (1897) 153-.
- , *Stolz, O.* *Mh. Mth. Ps.* 9 (1898) 816-; 371; 10 (1899) 96.
- formula. *Scheibner, W.* *Leip. Mth. Ps. B.* 36 (1884) 185-.
- , Euler's. *Plana, G.* *Brux. Ac. Bll.* 10 (1843) 303-.
- , general. *Winckler, A.* *Wien D.* 20 (1862) 97-.
- by Green's theorem. *Gmeiner, J. A.* *Mh. Mth. Ps.* 4 (1893) 277-.
- and triple integrals, simultaneous substitutions, theory. *Unferdinger, F.* *Wien Sb.* 63 (1871) (Ab. 2) 778-.
- , transformation. *Piola, G.* *Mod. Mm. S. It.* 20 (1828) 272-.
- , —, —, *Tait, P. G.* [1873] *Edinb. R. S. P.* 8 (1875) 209-.

$$\int_0^{\infty} \int_0^{\infty} \phi(ax^m \pm by^n) x^{p-1} y^{q-1} dx dy,$$

$$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} \phi(ax^m \pm by^n) x^{p-1} y^{q-1} dx dy.$$

*Raabe, J. L.* *Crelle J.* 37 (1848) 345-.

$$\int_b^c \int_0^b \frac{\log(\mu^2 - \nu^2)}{\sqrt{(c^2 - \mu^2)(\mu^2 - b^2)(c^2 - \nu^2)(b^2 - \nu^2)}} d\mu d\nu.$$

*Roberts, W.* *Liouv. J. Mth.* 15 (1850) 288-.

- Equality. *Bege, V. A.* *Liouv. J. Mth.* 3 (1858) 416.
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- , case. *Gregory, D. F.* *Camb. Mth. J.* 2 (1841) 215-.
- , process. *Arndt, F.* *Grunert Arch.* 5 (1844) 443-.
- Expansibility of quotient of two definite integrals of form  $\int dx dy \dots dz$ . *Schläfli, L.* *Crelle J.* 67 (1867) 183-.
- Expansion. *Schlömilch, O.* *Schlömilch Z.* 1 (1856) 75-.
- Formula, demonstration. *Thomson, (Sir) W.* *Liouv. J. Mth.* 10 (1845) 137-.
- , — (Thomson). *Liouville, J.* *Liouv. J. Mth.* 1 (1856) 445-.
- , Fourier's, generalised by Liouville. *Popov, A. T.* (xn) *Kazan Un. Mm.* (1848) (Bk. 4) 3-.
- Frullanian integrals. *Elliott, E. B.* *L. Mth. S. P.* 15 (\*1883-84) 12-.
- Integral expressing area of circle and of spherical triangle. *Schläfli, L.* *Liouv. J. Mth.* 20 (1855) 359-.
- Integrals of area and volume, transformations and values. *Tortolini, B. G.* *Arcad.* 80 (1839) 18-; 82 (1840) 97-.
- with 3 complex variables. *Picard, É. C.* *R.* 108 (1889) 132-.
- of Jacobi. *Zinin, N. N.* *Vars. S. Nt. Tr.* (1897) (Ps. C.) *Fasc.* 1, No. 8, ii.
- any order, and their periods, elementary theory. *Marie, M.* *C. R.* 75 (1872) 1078-; 1247-.

- Integrals in probability theory, two. *Czuber, E.* *Mh. Mth. Ps.* 2 (1891) 119-.
- representing products and powers of simple definite integrals. *Raabe, J. L.* [1847] *Zür. Mt.* 1 (*Heft* 2) (1847-48) 29-; *Crelle J.* 48 (1854) 137-.
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- unaltered in form by transformation of the variables. *Gundelfinger, S.* [1890] *Crelle J. Mth.* 91 (1881) 215-.
- , value of which is affected by order of integration. *Decher, G.* *Grunert Arch.* 19 (1852) 403-; 22 (1854) 413-.
- Inversion. *Volterra, V.* *Rm. R. Ac. Linc. Rd.* 5 (1896) (*Sem.* 1) 289-.
- , mode. *Appell, P.* *C. R.* 124 (1897) 213-.
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- , surface and volume integrals, relation among. *Tait, —.* *Edinb. R. S. P.* 16 (1890) 257.
- Maxima and minima, criteria. *Sabinine, G.* [1869] *St Pét. Ac. Sc. Bll.* 15 (1871) 70-.
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- Minimum. *Lebesgue, H.* *C. B.* 131 (1900) 935-.
- Multiple Gaussian sums. *Weber, H.* [1871] *Crelle J.* 74 (1872) 14-.
- and single integrals. *Nanson, E. J.* *Mess. Mth.* 26 (1897) 119-.
- Ostrogradskii's formulæ. *Zinin, N. N.* *Rec. Mth. (Moscou)* 15 (1891) 645-; *Fachr. Mth.* (1891) 304-.
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- Reduction. *Catalan, E. C.* *Liouv. J. Mth.* 4 (1889) 323-; 6 (1841) 81-; 8 (1843) 289-; *Brux. Mm. Cour.* 4<sup>e</sup>, 14 (1841) 47 pp.
- (error in Catalan's paper, 1841). *Boole, G.* *Camb. Mth. J.* 8 (1848) 277-.
- , *Chelini, D.* *G. Arcad.* 94 (1848) 49-.
- , *Liouville, J.* *Liouv. J. Mth.* 1 (1856) 289-.
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- , *Létnikov, A. V.* *Rec. Mth. (Moscou)* 14 (1890) 303-; *Fachr. Mth.* (1889) 288.
- , *Nekrasov, P. A.* [1891] *Rec. Mth. (Moscou)* 16 (1893) 81-; *Fachr. Mth.* (1891) 305.
- , *La Vallée-Poussin, C. J. de.* *C. R.* 127 (1898) 950-.
- , application of general differentiation. *Nekrasov, P. A.* *Rec. Mth. (Moscou)* 14 (1890) 410-; *Fachr. Mth.* (1889) 288-.
- , cases. *Raabe, J. L.* *Crelle J.* 28 (1844) 19-.
- , —, *Schaar, M.* *Brux. Ac. Bll.* 15 (1848) (*pte.* 2) 501-.
- , —, *Genocchi, A.* *Tortolini A.* 8 (1857) 284-.
- , —, *Schlömilch, O.* *Leip. B.* 9 (1857) 67-; *Liouv. J. Mth.* 2 (1857) 206-.

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- Reduction, cases. *Catalan, E. C.* Liège S. Sc. Mm. 12 (1885) No. 2, 12-, 17-.
- , —. *Maggi, G. A.* Mil. I. Lomb. Rd. 19 (1886) 689-.
- , —. *Sonine, N. J.* Fschr. Mth. (1889) 287-.
- , —. *Zinin, N. N.* Vars. S. Nt. Tr. (1889-90) (C. R., Ps. C.) No. 6, 9-.
- , —. *Sonin, N. Ja.* Rec. Mth. (Moscou) 14 (1890) 527-; Vars. S. Nt. Tr. (Mm.) 1 (1891) No. 4, 7 pp.
- , —. *Black, A.* [1897] Camb. Ph. S. T. 16 (1898) 219-.
- , direct, of class. *Silva, J. A. Martins da.* G. Teix. J. Sc. 8 (1881) 49-.
- , formula. *Sonin, N. Ja.* Vars. S. Nt. Tr. (1889-90) (C. R., Ps. C.) No. 2, 13-; Fschr. Mth. (1889) 287.
- , of generalised. *La Vallée-Poussin, C. J. de.* Liouv. J. Mth. 5 (1899) 191-.
- , quaternion formulæ. *Carvallo, E.* Par. S. Mth. Bll. 18 (1890) 80-.
- , Zinin's treatment of problem. *Nekrasov, P. A.* Rec. Mth. (Moscou) 16 (1893) 828-.
- Space and surface integrals. *Fiske, T. S.* [1891] A. Mth. 6 (1891-92) 61-, 131.
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- , integrals, condition of dependence on boundary alone, new interpretation. *Méray, C.* C. R. 128 (1899) 913-.
- , definition. *Lebesgue, H.* C. R. 131 (1900) 867-.
- , evaluation, and application to expansion, in series, of potential of ellipsoids. *Hobson, E. W.* L. Mth. S. P. 24 (1893) 80-.
- , in problem of 3 bodies. *Weiler, A.* As. Nr. 74 (1869) 85-.
- , transformation into multiple line integrals. *Larmor, J.* Mess. Mth. 17 (1888) 23-.
- , —, —, —. *McAulay, A.* Mess. Mth. 18 (1889) 139-.
- Theorem. *Volterra, V.* Tor. Ac. Sc. At. 32 (1896) 597- or 859-.
- , of Fourier. *Glaisher, J. W. L.* [1876] Mess. Mth. 6 (1877) 80-.
- , Frullani, extensions. *Leudesdorf, C. L.* Mth. S. P. 9 (1877-78) 118-.
- , Hadamard. *Hurwitz, A.* C. R. 128 (1899) 850-.
- , Kronecker. *Koenigs, G.* Liouv. J. Mth. 2 (1896) 41-.
- Theorems. *Jacobi, C. G. J.* Crelle J. 12 (1834) 1-.
- , general. *Ellis, R. L.* Camb. and Dubl. Mth. J. 1 (1846) 1-.
- , of Green and Cauchy. *Chessin, —.* C. R. 128 (1899) 604-.
- Theory. *Andrade, J.* C. R. 119 (1894) 1192-.
- , of numbers, application to integral calculus. *Gegenbauer, L.* Wien Ak. Sb. 102 (1893) (Ab. 2a) 927-.
- Transformation. *Haedenkamp, H.* Crelle J. 22 (1841) 184-.
- , *Boole, G.* Camb. Mth. J. 3 (1843) 216-; 4 (1845) 20-.

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- Transformation. *Svanberg, A. F.* Stockh. Öfv. 2 (1845) 228-; Ups. N. Acta S. Sc. 13 (1847) 1-.
- , *Chelini, D.* G. Acad. 106 (1846) 127-.
- , *Genocchi, A.* Tortolini A. 4 (1853) 401-.
- , *Russell, W. H. L.* QJ. Mth. 4 (1861) 163-, 316-.
- , *Holmgren, H.* [1864] Stockh. Ak. Hndl. 5 (1866) (No. 6) 40 pp.
- , *Tannenberg, W. de.* Bordeaux S. Sc. PV. (1897-98) 109-.
- , case. *Haedenkamp, H.* Crelle J. 20 (1840) 97-.
- , formula. *Cayley, A.* Camb. and Dubl. Mth. J. 4 (1849) 50-.
- , —. *Brioschi, F.* Rm. B. Ac. Linc. Rd. 2 (1886) (Sem. 2) 111-.
- , theorem. *Minchin, G. M.* [1871] QJ. Mth. 12 (1878) 172-.
- , theorems of Gauss and Stokes. *Predella, P.* Mil. I. Lomb. Rd. 20 (1887) 215-.
- , of variables. *Ostrogradsky, M. A.* [1836] St Pét. Ac. Sc. Mm. 3 (1838) 401-.
- Triple integrals, case. *Le Paige, C. M. M. H. H.* Liège S. Sc. Mm. 9 (1882) (No. 3) 4 pp.
- , embracing potential of homogeneous ellipsoid as particular case. *Mertens, F.* Gött. Nr. (1887) 269-.
- , reduction to quadratures. *Winckler, A.* [1858] Crelle J. 50 (1855) 1-.
- , transformation by changing order of integration. *Winckler, A.* Crelle J. 45 (1853) 168-.
- , —, and determination, case. *Unferdinger, F.* Wien Sb. 61 (1870) (Ab. 2) 105-, 417-.
- , variation. *Abbott, R.* R. S. P. 4 (1838) 42.
- $\int \dots \int dx dy \dots dz$ , whose limits are  $p_1 = a_1 x + b_1 y + \dots + h_1 z > 0$ ,  $p_2 > 0$ , ...  $p_n > 0$ , and  $x^2 + y^2 + \dots + z^2 < 1$ . *Schläfli, L.* QJ. Mth. 2 (1858) 269-; 3 (1860) 54-, 97-.
- $\int \dots \int dx dy \dots dz$ , whose limits are  $p_1 = a_1 x + b_1 y + \dots + h_1 z > 0$ ,  $p_2 > 0$ , ...  $p_n > 0$ , and  $x^2 + y^2 + \dots + z^2 < 1$ , expansibility. *Schläfli, L.* QJ. Mth. 8 (1867) 370-.
- $\iiint \frac{dx dy dz}{r^{1+\alpha}}$ , extended over the interior of ellipsoid. *Bigler, U.* Bern Mt. (1887) 52-.

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- Verhulst, P. F.* Gand A. Ac. (1823-24) 30 pp.
- Walsh, J.* Tilloch Ph. Mg. 64 (1824) 330-.
- Cankrein, H. K.* Ph. Mg. 8 (1830) 321-.
- Cauchy, A. L.* Bb. It. 62 (1831) 373-.
- Poisson, S. D.* [1831] Par. Mm. Ac. Sc. 12 (1833) 223-.
- Müller, A.* Crelle J. 13 (1835) 240-.
- Jacobi, C. G. J.* [1836] Crelle J. 17 (1837) 68-.
- (Jacobi.) *Liouville, J.* Liouv. J. Mth. 8 (1838) 1-.
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- Delaunay, C.* [1842] *Par. Éc. Pol. J. Cah.* 29 (1843) 37-.
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- Blanken, H. van.* (vii) *Amst. N. Ws. Ntk. Vh.* 2 (1854) 1-.
- (Jacobi, 1837.) Heine, H. E.* *Crelle J.* 54 (1857) 68-.
- Meyer, A.* *Liège Mm. S. Sc.* 11 (1858) 125-.
- Lindelöf, L. L. B. A. Rp.* (1859) (pt. 2) 5-.
- Steichen, —.* *Brux. Mm. Cour.* 8°, 14 (1862) 126 pp.
- Sabinin, E. T.* [1869] (xii) *Rec. Mth. (Moscou)* 4 (1869-70) (Pt. 1) 94-.
- Heine, E.* *Mth. A.* 2 (1870) 188-.
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- Méray, C.* *Par. Éc. Norm. A.* 6 (1877) 187-.
- (Sarrus.) Sabinin, E. T.* [1889] *Rec. Mth. (Moscou)* 14 (1890) 451-; *Fachr. Mth.* (1890) 384.
- Ermakov, V. P.* [1892] *Rec. Mth. (Moscou)* 16 (1893) 369-; *Fachr. Mth.* (1892) 336-.
- Hancock, H. A.* *Mth.* 9 (1894-95) 179-; 10 (1895-96) 81-.
- Dixon, A. C.* *Mess. Mth.* 26 (1897) 54-.
- Tannenber, W. de.* *Bordeaux S. Sc. PV.* (1897-98) 105-.
- Kneser, A.* *Mth. A.* 50 (1898) 27-.
- Duhem, P.* *Toul. Fac. Sc. A.* 2 (1900) 115-.
- Sommerfeld, A.* *D. Mth. Vr. Jbr.* 3 (1900) (Heft 1) 188-.
- Application to determination of equation of propeller surface. *Martin, L.* (xii) *Mag. Tud. Ak. Étk. (Mth.)* 5 (1879) (No. 7) 30 pp.
- double and triple integrals. *Strauch, G. W.* *Wien D.* 16 (1859) 19-.
- geodesics on rotation ellipsoid of  $n$  dimensions. *Rudio, F.* *Zür. Vjschr.* 43 (1898) 340-.
- geometrical problems. *Starkoff, A.* *Par. S. Mth. Bll.* 13 (1885) 132-; *Kazan S. Nt. (Ps.-Mth.)* P. 4 (1886) 7-.
- of Hamilton's operator  $V$ . *Joly, C. J.* [1899] *Ir. Ac. P.* 5 (1898-1900) 666.
- to integration of differential equations. *Binet, J. P. M.* *C. R.* 14 (1842) 654-.
- of integration of differential equations by factors and differentiation. *Challis, J.* *Ph. Mg.* 46 (1878) 388-.
- to mechanics. *Ampère, A. M.* [1803] *Par. Mm. Sav. Étr.* 1 (1806) 493-.
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- Differential equations. *Richelot, F. J.* *C. R.* 49 (1859) 641-.
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- , partial, arising from the calculus, class. *Kürschák, J.* *Mth. Term. Éts.* 8 (1890) 60-; *Mth. Nt. B. Ung.* 8 (1891) 35-.
- Differential equations, partial, arising from double integrals. *Kürschák, J.* *Mth. Term. Éts.* 7 (1889) 296-; *Mth. Nt. B. Ung.* 7 (1890) 263-.
- Discontinuity. *Challis, J.* *Ph. Mg.* 24 (1862) 196-.
- curves. *Sabinin, E. T.* [1898] *Rec. Mth. (Moscou)* 20 (1899) 235-; *Fachr. Mth.* (1898) 328.
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- Failure, supposed. *Airy, G. B.* *Ph. Mg.* 22 (1861) 12-.
- Geometrical theory of milling machines. *Pregél, —.* *Dingler* 296 (1895) 254-, 265-.
- History. *Strauch, G. W.* *N. A. Mth.* 10 (1851) 433-.
- , previous to Lagrange. *Guiraudet, P.* [1862] (xii) *Lille S. Mm.* 9 (1863) 525-.
- Isoperimeters. *Trembley, J.* *Berl. Mm. Ac.* (1804) 25-.
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- , differential equations. *Ostrogradsky, M. A.* [1848] *St Pét. Ac. Sc. Mm.* 6 (1850) 385-.
- , history. *Eneström, G.* *Bb. Mth.* (1898) 88.
- , method. *Léger, É.* *N. A. Mth.* 5 (1846) 204-.
- , *Bellion, —.* *N. A. Mth.* 6 (1847) 27-.
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- Isoperimetric integrals, maxima and minima, criteria. *Mayer, A. C. G.* *Leip. Mth. Ps. B.* 29 (1877) 114-.
- problem, distinction of maxima and minima. *Lundström, C. E.* [1869] *Ups. N. Acta S. Sc.* 7 (1870) (No. 4) 89 pp.
- problems. *Minding, É. F. A.* [1877] *St Pét. Ac. Sc. Bll.* 24 (1878) 398-.
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- — —, criteria. *Delaunay, C.* *Liouv. J. Mth.* 6 (1841) 209-.
- — —, *Spitzer, S.* *Wien SB.* 12 (1854) 1014-; 14 (1854) 41-.
- — —, *Culverwell, E. P.* *B. A. Rp.* (1884) 649-; (1887) 598-.
- — —, *Winckler, A.* *Wien Ak. Sb.* 97 (1889) (Ab. 2a) 1065-.
- — —, *Culverwell, E. P.* *L. Mth. S. P.* 23 (1892) 241-; 25 (1894) 361-; 26 (1895) 345-.
- — —, (Jacobi), *Bertrand, J.* *Par. Éc. Pol. J.* 28° cah. (1841) 276-.

- Maxima and minima of integrals. *Markoff*, —. Par. Éc. Norm. A. 3 (1886) 81—.
- — — simple integrals between fixed limits. *Scheeffer*, L. Mth. A. 25 (1885) 522—.
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- — —, solutions, criteria. *Culverwell*, E. P. [1886] Phil. Trans. (A) 178 (1888) 95—.
- — —, — for finite variations, conditions. *Culverwell*, E. P. [1899] Ir. Ac. P. 5 (1898-1900) 377—.
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- , elementary. *Du Bois-Reymond*, P. Mth. A. 15 (1879) 288—, 564—.
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where  $f(n) = A_1 \phi(n, 1) + A_2 \phi(n, 2) + \dots$

and  $\psi(n, k) = a_1 \phi(n, 1) + a_2 \phi(n, 2) + \dots$

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— 2 variables arising from inversion of integrals of two given functions. *Fuchs, L.*

*Gött. Ab.* 27 (1881) 39 pp.

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$$\left[ \frac{x^\mu}{\mu!} \pm \frac{x^{\mu+n}}{\mu+n!} + \frac{x^{\mu+2n}}{\mu+2n!} \pm \dots (n=4) \right].$$

*Kapteyn, J. C., & Kapteyn, W.* *Amst. Ak. Vh.* 24 (1886) 98 pp.

— — — *n*th order. *Kapteyn, J. C., & Kapteyn, W.* *Wien Ak. Sb.* 93 (1886) (*Ab.* 2) 807-.

Infinite group of rational integral functions

$$\left[ R_n x = (-1)^n x^n \frac{d^n}{dx^n} (e^{-x} \cdot x^n) \right].$$

*Berger, A.* *Stockh. Öfv.* (1899) 175-.

Integral derived from continued fraction, theorem of Hermite. *Gegenbauer, L.* *Wien Ak. Sb.* 92 (1886) (*Ab.* 2) 995-.

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Pseudo- and hyper-Bernoullian functions and their applications. *Longchamps, G. de.* *Brux. Mm. Cour.* 4<sup>o</sup>, 52 (1890-93) No. 1, 41 pp.

Recurring function  $c_n = \sum_{v=0}^n (-1)^v \binom{n}{v} c_v$ .

*Lerch, M.* *Časopis* 22 (1893) 31-; *Fschr. Mth.* (1893-94) 409-.

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— — — for odd values of argument. *Lerch, M.* *G. Teix. J. Sc.* 14 (1900) 65-.

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*C. R.* 18 (1844) 1139-.

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*Liouv. J. Mth.* 1 (1836) 269-.

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$C_n^p(x)$ . *Gegenbauer, L.* *Wien Ak. Sb.* 97 (1889) (*Ab.* 2a) 259-.

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$y$  defined by  $\sum a_n x^n y^n = 0$ . *Melander, K.* *Fschr. Mth.* (1890) 409.

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$$1 + \frac{p'p''}{1 \cdot q'q''} + \frac{p \cdot p + 1 \cdot p'p' + 1 \cdot p''p'' + 1}{1 \cdot 2 \cdot q' \cdot q' + 1 \cdot q'' \cdot q'' + 1}.$$

*Thomae, C. J.* Crelle J. Mth. 87 (1879) 26-.

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$$0 = F(-2m-1, -n, -2n, 2)$$

$$(-1)^m = \frac{n_m}{(2n)_{2m}} = F(-2m, -n, -2n, 2).$$

*Bretschneider, C. A.* Grunert Arch. 13 (1849) 223.

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Brux. Ac. Sc. Mm. 43 (1882) (No. 9) 10 pp.; 44 (1882) (No. 1) 108 pp.; 46 (1886) (No. 5) 28 pp.;

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$$\begin{aligned} &\left(\frac{d}{dx}\right)^{i-m} (x^2-1)^i \\ &= (x^2-1)^m \frac{i-m}{i+m} \left(\frac{d}{dx}\right)^{i+m} (x^2-1)^i. \end{aligned}$$

*Hudson, W. H. H.* [1877] Mess. Mth. 7 (1878) 117.

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$$\begin{aligned} &- 1 + \frac{x}{z} + \frac{x(x-1)}{z(z-1)} + \frac{x(x-1)(x-2)}{z(z-1)(z-2)} \\ &\quad + \frac{x(x-1)(x-2)(x-3)}{z(z-1)(z-2)(z-3)} + \dots, \end{aligned}$$

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$$- 1 + \frac{\beta}{\alpha+1} + \frac{\beta(\beta+1)}{(\alpha+1)(\alpha+2)} + \dots, \text{ summation.}$$

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- Yanisherskit, E. P.* (xn) Kazan Un. Mm. (1863) (Ps.-Mth., No. 2) 100 pp.
- Darboux, G.* C. R. 70 (1870) 746-.
- Mansion, P.* [1878] Brux. Mm. Cour. 8°, 25 (1875) No. 1, xvi + 282 pp.
- Kowalevsky, S. von.* [1874] Crelle J. Mth. 80 (1875) 1-.
- Bäcklund, A. V.* Mth. A. 17 (1880) 285-.
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- Saltykow, N.* C. R. 129 (1899) 195-.
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- and classification. *Lie, S.* Gött. Nr. (1872) 473-.
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- , method of Jacobi, extension. *Méray, C.* Par. Éc. Norm. A. 7 (1890) 217-.
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- — definite integral and theory of equations. *Marcolongo, R.* Nap. Rd. 27 (1888) 500-.

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- —, equation connected with. *Cayley, A.* B. A. Rp. (1881) 534-.
- Algebraic systems and their relations to systems of partial differential equations. *Delassus, É.* Par. Éc. Norm. A. 14 (1897) 21-.
- Analogues of equations of 1st order. *Beudon, J.* C. R. 126 (1898) 324-, 388-.
- Arbitrary functions, calculation. *Beudon, J.* C. R. 128 (1899) 1215-.
- —, elimination. *Garbieri, G.* Ven. I. At. (1886-87) 881-.
- —, —, new method. *Minich, S. R.* C. R. 84 (1877) 1496-; 87 (1878) 161-.
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- 3rd order. *Guldberg, A.* Christiania Skr. (Mth.-Nt. Kl.) (1900) No. 5, 43 pp.
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$A_1 \xi \frac{d^ny}{d\xi^n} + B_1 \frac{d^{n-1}y}{d\xi^{n-1}} = \xi^m \left( A \xi \frac{dy}{d\xi} + By \right)$ .

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$sy'' + (r+qx)y' + (p+nx+mx^2)y = 0$ .

*Spitzer, S.* Schlömilch Z. 8 (1863) 123-.

of  $\frac{d^2y}{dx^2} = 3mx^2 \frac{d^2y}{dx^2} + 6m(\mu+2)x \frac{dy}{dx} + 3m(\mu+2)(\mu+1)y$ .

*Spitzer, S.* Arch. Mth. Ps. 42 (1864) 102-.

$x^m \frac{d^{2m}y}{dx^{2m}} = y$ ,  $m$  being a negative integer.

*Spitzer, S.* Arch. Mth. Ps. 42 (1864) 328-.

$(a+bx+cx^2)(b+2cx)y'' + A(a+bx+cx^2)y' + B(b+2cx)y = 0$ .

*Spitzer, S.* Arch. Mth. Ps. 42 (1864) 330-.

$(b+2cx)y'' + A(a+bx+cx^2)y' + B(b+2cx)(a+bx+cx^2)y = 0$ .

*Spitzer, S.* Arch. Mth. Ps. 42 (1864) 331.

$(b+2cx)y'' + A(a+bx+cx^2)y' + B(b+2cx)y = 0$ .

*Spitzer, S.* Arch. Mth. Ps. 42 (1864) 332.

$(m+x)(n+x)y'' + (m-n)y' - \lambda^2(m+x)^2y = 0$ .

*Spitzer, S.* Arch. Mth. Ps. 42 (1864) 375-.

$\frac{d^ny}{dx^n} = x^m y + A_1 x + A_2 x^2 + \dots + A_m x^{m-1}$ .

*Spitzer, S.* Z. Mth. Ps. 10 (1865) 155-.

$xy^{(n)} + ay^{(n-1)} = bxy$ . *Spitzer, S.* Z. Mth.  
Ps. 10 (1865) 221-.

$\frac{d^2y}{dx^2} = ay + \psi(x)$ . *Rogner, J.* Arch. Mth.  
Ps. 45 (1866) 315-.

$x \frac{d^ny}{dx^n} + \lambda \frac{d^{n-1}y}{dx^{n-1}} = \kappa \left( x \frac{dy}{dx} + \mu y \right)$ . *Spitzer, S.*

Arch. Mth. Ps. 46 (1866) 25-.

$a_{m+n}y^{(m+n)} + a_{m+n-1}y^{(m+n-1)} + \dots + a_{m+1}y^{(m+1)} + (a_m+x)y^{(m)} + a_{m-1}y^{(m-1)} + \dots$

$+ a_1 y' + a_0 y = 0$ .

*Spitzer, S.* Arch. Mth. Ps. 47 (1867) 110-.

$(a_2+b_2x+c_2x^2)\frac{d^2y}{dx^2} + (a_1+b_1x)\frac{dy}{dx} + a_0y = 0$ .

*Holmgren, H.* Stockh. Ak. Hndl. 7 (1867-  
68) (No. 9) 58 pp.

$(a_n+b_nx)\frac{d^ny}{dx^n} + \dots + (a_0+b_0x)y = 0$ . *Lětni-*

*kov, A. V.* [1876] Rec. Mth. (Moscou) 14  
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$\frac{d^2V}{dx^2} + \frac{\mu+1}{x} \frac{dV}{dx} + V = 0$ . *Worms de Romilly,*

*P.* Liouv. J. Mth. 4 (1878) 177-.

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(xii) Kharkov Mth. S. Com. (1880) 46-.

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115-; Fsch. Mth. (1884) 288.

$xy'' + my' + nyx = 0$ . *Stodóikiewicz, A. J.*  
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287.

$\frac{d^ny}{dx^n} + \frac{a}{x} \frac{d^{n-1}y}{dx^{n-1}} + \beta y = 0$ . *Aleksyevskij, V. P.*

Kharkov Mth. S. Com. (1884) 41-; Fsch.  
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—  $\frac{dy}{dx} = X(ay^2 + by + c) + X_1$ , where  $X$  and  $X_1$  are functions of  $x$  and  $a, b, c$ , are constants. *Stodółkiewicz, A. J.* *Prace Mt.-Fiz.* 3 (1892) 52-; *Fachr. Mth.* (1892) 300.

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- Coresolvents. *Cockle, Jas.* [1862] QJ. Mth. 6 (1863) 9-, 151-, 226-.
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- Critical functions. *Cockle, Jas.* QJ. Mth. 4 (1861) 97-, 265-.
- —. *Warren, J. W.* [1863-64] (vi) QJ. Mth. 6 (1864) 231-, (viii) 372-.
- Deformation invariants. *Żorawski, K.* Acta Mth. 16 (1892-93) 1-.
- Differential equation of most general substitution of 1 variable. *MacMahon, P. A.* Ph. Mg. 23 (1887) 542-.
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- — of algebraic equations, higher degree. *Lachtin, L. K.* [1896-98] Rec. Mth. (Moscou) 19 (1897) 211-, 393-; 20 (1899) 260-; Fschr. Mth. (1897) 88-; (1898) 74.
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- Function- and invariant-theory of binomial configurations. *Wellstein, J.* Mth. A. 52 (1899) 70-.
- Fundamental invariants. *Vogt, H.* Par. Éc. Norm. A. 6 (1889) (Suppl.) 71 pp.
- General quartine or incriticoid of 4th degree. *Harley, (Rev.) R.* Ph. Mg. 26 (1888) 456-.
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- Homographic invariants and quotient derivatives. *Forsyth, A. R.* Mess. Mth. 17 (1888) 154-.
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- —, application to reduction of differential equations to canonical type. *Koenigs, G.* *C. R.* 121 (1895) 875-.
- — of continuous transformation groups. *Żorawski, K.* *Krk. Ak. (Mt.-Prz.) Rz.* 8 (1895) 232-; *Crc. Ac. Sc. Bll.* (1895) 127-.
- —, theory, corollary of theory of differential invariants. *Lie, S.* *Leip. Mth. Ps. B.* 49 (1897) 342-.
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- of class of equations of 1st order. *Elliot, Z.* *C. R.* 110 (1890) 629-.
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- — transformation groups. *Tresse, A.* *Acta Mth.* 18 (1894) 1-.
- , covariants and quotient-derivatives associated with differential equations. *Forsyth, A. R.* [1888] *Phil. Trans. (A.)* 179 (1889) 377-.
- of differential quadratics. *Maschke, H.* *N. Y. Am. Mth. S. T.* 1 (1900) 197-, 508.
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- — —, *Rivereau, —.* *Toul. Fac. Sc. A.* 4 (1890) M, 5 pp.
- — homogeneous differential equation. *Mittag-Leffler, G.* *C. R.* 109 (1889) 637-; *Stockh. Öfv.* (1889) 427-.
- — partial equations. *Le Roux, J. C.* *R.* 126 (1898) 721-.
- — —, *Cotton, É.* *Par. Éc. Norm. A.* 17 (1900) 211-.
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- of skew curves. *Halphen, G. H.* *Par. Éc. Pol. J. Cah.* 47 (1880) 1-.
- — surface with reference to conformal transformations of space. *Tresse, A.* *C. R.* 114 (1892) 948-.
- — system of  $m$  points by projective transformation. *Lovett, E. O.* *Am. J. Mth.* 21 (1899) 168-; 22 (1900) 46-.
- — —,  $m+1$  points with reference to projective transformations. *Lovett, E. O.* *C. R.* 127 (1898) 346-.
- — transformation groups, extension of concept. *Killing, W.* *Mth. A.* 35 (1890) 423-.
- Linear partial differential equations with continuous transformation group. *Campbell, J. E.* *N. Y. Am. Mth. S. T.* 1 (1900) 243-, 509.
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- Pfaff-invariants. *Cayley, —.* *QJ. Mth.* 26 (1893) 195-.
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- — partial differential equations, 2nd order. *Medolaghi, P.* *Rm. R. Ac. Linc. Rd.* 6 (1897) (Sem. 2) 247-, 313-.
- Primary forms of linear differential equations, 2nd order. *Schlesinger, L.* *C. R.* 115 (1892) 32-.
- Projective cyclic concomitants. *Elliot, E. B.* *L. Mth. S. P.* 20 (1889) 131-.
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- Quantoids. *Cockle (Sir) Jas. Ph. Mg.* 30 (1865) 347-.
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- , homographic and circular. *Rogers, L. J.* *L. Mth. S. P.* 17 (1887) 220-, 344-; 18 (1886-87) 130-.
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- and invariants. *Cayley, A.* *QJ. Mth.* 26 (1893) 169-, 289-.
- , method, as containing an exhaustive theory of singularities of curves. *Sylvester, J. J.* *Nt.* 33 (1886) 222-, 331-.
- , perpetuant. *MacMahon, P. A.* *L. Mth. S. P.* 17 (1887) 139-.
- , pure irreducible, of 4th order. *Sylvester, J. J.* *C. R.* 102 (1886) 152-.
- , —, tables to weight 8. *Cayley, A.* *Am. J. Mth.* 15 (1893) 75-.
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- — —, differential equations. *Elliot, E. B.* [1886] *L. Mth. S. P.* 18 (1886-87) 142-.
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- , — and  $n$ -ary. *Elliott, E. B.* *L. Mth. S. P.* 17 (1887) 172-.
- Reciprocants, theory. *Sylvester, J. J.* *Am. J. Mth.* 8 (1886) 196-; 9 (1887) 1-; 113-; 297-; 10 (1881) 1-.
- , —, results connected with. *Leudesdorf, C.* *L. Mth. S. P.* 17 (1887) 197-.
- Resolvent of linear differential equations. *Beke, E.* *Mth. A.* 46 (1895) 557-.
- Singularities of partial differential equations, 1st order. *Marotte, F. C. R.* 123 (1896) 933-.
- Ternary quadratic forms. *Ricci, G.* *Rm. R. Ac. Linc. Rd.* 5 (1889) (*Sem.* 1) 643-.
- Transformations with differential invariant. *Haton de la Goupillière, J. N.* *Liouv. J. Mth.* 2 (1876) 241-.

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### 5600 General.

- Applied mathematics. *Franceschinis, F. M.* *Mil. G. S. Inc.* 4 (1898) 1-.
- , —. *Runge, C.* *Mth. A.* 44 (1894) 437-.
- Calculus, application to interpretation of natural phenomena and discovery of their laws. *Pérard, L.* *Brux. A. Un.* (1849-50) 469-.
- of residues, application to mathematical physics. *Cauchy, A. L.* *Par. Mm. Ac. Sc.* 7 (1827) 463-.
- Continuous functions with no derivative in elements of mechanics. *Appell, P., & Janaud,* —. *C. R.* 93 (1881) 1005-.
- Dirichlet's integral. *Brodén, T.* *Mth. A.* 52 (1899) 177-.
- method for finding coefficients of Gauss's series. *Kronecker, L.* *Hamb. Mth. Gs. Mt.* 2 (1890) (*Festschr., Tl. 2*) 32-.
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- $$\frac{\partial X}{\partial x} + \frac{\partial Y}{\partial y} + \frac{\partial Z}{\partial z}.$$
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- Expansion of arbitrary functions of 1 variable in trigonometric series, history. *Sachse, A.* *Z. Mth. Ps.* 25 (1880) (*Suppl.*) 229-.
- functions in series of continuous functions with varying parameter. *Pagani, G. M.* [1828] *Brux. Ac. Sc. Mm.* 5 (1829) 5-.
- — — periodic quantities, with applications. *Poisson, S. D.* *Par. Éc. Pol. J.* 18<sup>e</sup> cah. (1820) 417-.
- — —, terms of which satisfy same differential equation of 2nd order with variable parameter. *Liouville, J.* [1835-37] *Liouv. J. Mth.* 1 (1836) 253-; 2 (1837) 16-, 418-.
- — — linear differential equation with variable parameter. *Liouville, J., & Sturm, C.* *Liouv. J. Mth.* 2 (1837) 220-.
- Green's function, existence in plane simply connected region. *Osgood, W. F.* *N. Y. Am. Mth. S. T.* 1 (1900) 310-.

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- , —, class analogous to. *Liouville, J.* *Liouv. J. Mth.* 10 (1845) 327-.
- Homogeneity in physics. *Vaschy, A. C. R.* 114 (1892) 1416-.
- Line and surface integrals, generalisation of Stokes's theorem. *Gilbert, —.* *Brux. S. Sc. A.* 16 (1892) (*Pt.* 1) 2-.
- Mathematical expressions for physical quantities, permanence of form. *Gwyther, R. F.* *Manch. Lt. Ph. S. Mm. & P.* 9 (1895) 119-.
- physics, application of linear systems. *Larose, H.* *A. Tél.* 23 (1896-97) 259-.
- — and pure analysis, relations. *Poincaré, H.* *Acta Mth.* 21 (1897) 331-.
- Mathematics, application to natural science. *Petzal, J.* *Wien Alm. (Anh.)* (1858) 187-.
- , — — physics. *Liebermeister, C.* *Erdm. J. Pr. C.* 84 (1861) 416-.
- , influence on physics. *Collins, E.* *St Pét. Ac. Sc. Rec.* (1837) 179-.
- and physics, relations. *Ørsted, H. C.* *Oken Isis* (1831) 854-.
- Operators in physical mathematics. *Heaviside, O.* *R. S. P.* 52 (1893) 504-; 54 (1894) 105-.
- Periodic series. *Meyer, A.* [1850] *Crelle J.* 43 (1852) 60-.
- Physical data applicable to mathematics. *Rawson, R.* [1847] *Manch. Ph. S. Mm.* 8 (1848) 329-.
- Physics, principles of algebra of. *Macfarlane, A.* *Am. As. P.* (1891) 65-.
- Solution, general, of Maxwell's equations. *Birkeland, K.* *Arch. Sc. Ps. Nt.* 84 (1895) 5-.
- of problems of electricity by transformation of conjugate functions. *Maxwell, J. C.* [1871] (*viii*) *Camb. Ph. S. P.* 2 (1876) 242-.
- Theory of matrices, application to linear differential equations. *Brill, J.* *Camb. Ph. S. P.* 8 (1895) 201-.
- Transformation of coordinates in heat problems. *Bertrand, J.* *Liouv. J. Mth.* 14 (1849) 1-.
- Use of Riemann surface in applied mathematics. *Carlaw, H. S.* *B. A. Rp.* (1900) 644-.
- Vector functions. *Burkhardt, H.* *Mth. A.* 43 (1893) 197-.
- — and their applications to physics. *Élie, B.* *Bordeaux S. Sc. Mm.* 3 (1893) 1-.

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### FOURIER'S SERIES.

- (Conduction of heat.) *Fourier, J. B. J.* [1807-11] *Par. S. Phlm. N. Bl.* 1 (1807) 112-; *Par. Mm. Ac. Sc.* 4 (1824) 185-; 5 (1826) 153-.
- Thomae, J.* *Z. Mth. Ps.* 17 (1872) 78-.
- Du Bois-Reymond, P.* *Gött. Nr.* (1873) 571-.
- Ascoli, G.* [1873-78] *A. Mt.* 6 (1875) 21-, 298-; *Rm. R. Ac. Linc. Mm.* 2 (1878) 584-.
- Jordan, C.* *C. R.* 92 (1881) 228-.
- Halphen, G. H.* *C. R.* 95 (1882) 1217-.
- Veltmann, W.* *Z. Mth. Ps.* 27 (1882) 193-.

- Gilbert, P. Brux. S. Sc. A. 8 (1884) (Pt. 2) 1-.
- Hermite, C. Am. J. Mth. 9 (1887) 381-.
- Michelson, A. A. Nt. 58 (1898) 544-.
- Love, A. E. H. Nt. 58 (1898) 569-.
- Gibbs, J. W. [1898] Nt. 59 (1898-99) 200.
- Michelson, A. A. [1898] Nt. 59 (1898-99) 200.
- Love, A. E. H. [1898] Nt. 59 (1898-99) 200-.
- Hayward, R. B. Nt. 59 (1898-99) 271.
- Baker, H. F. Nt. 59 (1898-99) 319-.
- Gibbs, J. W. Nt. 59 (1898-99) 606.
- Poincaré, —. Nt. 60 (1899) 52.
- Love, A. E. H. Nt. 60 (1899) 100-.
- Lerch, —. Bll. Sc. Mth. 24 (1900) 102-.
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- — straight lines with surfaces. *Salmon*, *G.* *QJ. Mth.* 1 (1857) 329-.
- — — — —, 4- and 5-point. *Gordan*, *P.* *Z. Mth. Ps.* 12 (1867) 495-.
- — — — —, various kinds. *Clebsch*, *A.* *Crelle J.* 58 (1861) 98-.
- — surfaces. *Spottiswoode*, *W.* *Phil. Trans.* 162 (1872) 259-.
- — — (Spottiswoode's problems). *Clifford*, *W. K.* *R. S. P.* 21 (1873) 425-.
- — — *Halphen*, *G. H.* [1874] *Par. S. Mth. Bll.* 3 (1875) 28-.
- — —, 2, having common generator, fundamental principle. *Mansion*, *P.* *Brux. Ac. Bll.* 3 (1882) 753-.
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- — — and normals to skew surfaces. *Charles*, *M.* *Liouv. J. Mth.* 2 (1837) 413-.
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- , —, —, —, (Laguerre). *Smith, P. F.* A. Mth. 1 (1900) 153-.
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- Relationship, geometric. *Swelengrebel, J. G. H.* [1850] Crelle J. 43 (1852) 245-.
- , quadratic. *Geiser, C. F.* Bern Mt. (1865) 97-.
- , —, *Weyr, Ed.* Z. Mth. Ps. 14 (1869) 445-.
- , —, *Cassani, P.* [1897] Ven. I. At. (1897-98) 30-.
- , —, reciprocal. *Millinowski, —.* Crelle J. Mth. 79 (1875) 140-.
- of 5th degree. *Müller, Hub.* Mth. A. 2 (1870) 281-.
- Representable surfaces: algebraic surfaces uniformly representable on plane. *Nöther, M.* Gött. Nr. (1870) 1-.

## Point-groups 8030

- 8030 Groups of points on an algebraic curve; genus of curves; principle of correspondence. (See also 7610, 7630, 7660.)**

- Algebraic functions. *Brill, A., & Noether, M.*  
[1873] *Gött. Nr.* (1873) 116-; *Mth. A.* 7  
(1874) 269-.  
— — *Noether, M.* *Mth. A.* 15 (1879) 507-.  
— — (Noether). *Weiss, W.* *Mh. Mth. Ps.* 7  
(1896) 321-.  
— —, development of theory. *Brill, A., &*  
*Noether, M.* [1893] *D. Mth. Vr. Jbr.* 3  
(1894) 107-.  
— — and singularities of curves. *Noether, M.*  
*Mth. A.* 9 (1876) 166-.  
— — — — —, extension of theorem of  
*Noether's.* *Del Pezzo, P.* *Palermo Cir. Mt.*  
*Rd.* 2 (1888) 189-.

- Conics through several points of given curves.  
*Berzolari, L.* Mil. I. Lomb. Rd. 33 (1900) 664-, 809-.
- Constructions of 3rd and 4th degrees, by straight line and cubic curve. *London, F.* Z. Mth. Ps. 41 (1896) 129-.
- Correspondence, Cremonian, in plane and space.  
*Aschieri, F.* Mil. I. Lomb. Rd. 14 (1881) 21-.
- , —, quadratic, between elements of 2 line spaces. *Aschieri, F.* Mil. I. Lomb. Rd. 14 (1881) 219-.
- of 2 curves (Steiner's theorems, Crelle J. 1846). *Padova, E.* G. Mt. 5 (1867) 240-.
- on curves. *Küpper, C.* Prag Sb. (1892) (Mth.-Nt.) 257-.
- , formula. *Brill, A.* Mth. A. 7 (1874) 607-.
- , multiform, application to curves of 3rd degree. *Vries, J. de.* N. Arch. Wisk. 12 (1886) 92-; Fsch. Mth. (1885) 629.
- of 2 points on curve. *Cayley, A. L.* Mth. S. P. 1 (1866) No. 7, 7 pp.
- between points of 2 plane curves, special. *Pirondini, G.* G. Mt. 38 (1900) 92-.
- of points in relation to 2 tetrahedra. *Cayley, A. L.* Mth. S. P. 4 (1873) 396-.
- , quadratic, between 2 simply infinite systems. *Weyr, Em.* A. Mt. 4 (1870-71) 272-.
- between straight line and curve, theorem of Lüroth and Gordan. *Netto, E.* Mth. A. 46 (1895) 810-.
- of straight lines; correspondence of points. *Aschieri, F.* G. Mt. 13 (1875) 328-.
- — systems of points on curve. *Brill, A.* Gött. Nr. (1871) 507-; Mth. A. 6 (1873) 33-.
- (1, 1) between focal cubics, metrical properties. *Bricard, R.* Par. S. Mth. Bll. 28 (1900) 39-.
- (—, —), involutorial. *Genese, R. W. B. A.* Rp. (1881) 539.
- (1, 2), algebraic and geometric study. *Pittarelli, G.* Rm. R. Ac. Linc. Mm. 8 (1886) 375-.
- (—, —) on cubics with double point. *Pittarelli, G.* Rm. R. Ac. Linc. Mm. 3 (1886) 401-.
- (1, 4) between points on curves of surfaces of 3rd degree. *Walsch, E.* [1894] D. Mth. Vr. Jbr. 4 (1897) 113-.
- (2, 2). *Cayley, A.* QJ. Mth. 11 (1871) 88-; 12 (1873) 197-.
- (—, —), and curves of genus 1. *Weyr, E. J.* Wien Ak. Sb. 87 (1883) (Ab. 2) 592-.
- (—, —), form  $f(x^2y^2)$  and its invariants and covariants. *Capelli, A.* G. Mt. 17 (1879) 69-.
- (m, n). *Retali, V.* Mil. I. Lomb. Rd. 32 (1899) 1051-.
- Correspondences, algebraic. *Brill, A.* Mth. A. 31 (1888) 374-; 36 (1890) 321-.
- , —, and the generalised principle. *Hurwitz, A.* Leip. Mth. Ps. B. 88 (1886) 10-; Mth. A. 28 (1887) 561-.
- , —, between  $r$  points of a linear space. *Berzolari, L.* Rm. R. Ac. Linc. Rd. 4 (1895) (Sem. 2) 148-.

- Correspondences on elliptic curves. *Brodén, T.* Stockh. Öfv. (1893) 45-, 213-.
- — — — — *Kantor, S.* Tor. Ac. Sc. At. 29 (1894) 9-.
- — — — —, uniform. *Segre, C.* Tor. Ac. Sc. At. 24 (1889) 784-.
- between points of 2 curves. *Halphen, G. H.* [1876] Par. S. Mth. Bll. 5 (1877) 7-.
- , symmetrical, of odd degree. *Kohn, G.* Wien Ak. Sb. 106 (1897) (Ab. 2a) 488-.
- , uniform, between groups of  $p$  points on curve of genus  $p$ . *Castelnuovo, G.* Mil. I. Lomb. Rd. 25 (1892) 1189-.
- , —, hyperelliptic curves having. *Kantor, S.* Palermo Cir. Mt. Rd. 9 (1895) 65-.
- , —, singular, of harmonic elliptic curves. *Amodeo, F. A.* Mt. 19 (1891-92) 145-.
- (1, 2) and (1, 3). *Piazza, S.* Tor. Ac. Sc. At. 17 (1881) 431-.
- ( $p, p$ ) on curves of genus  $p$  with general moduli. *Scorza, G.* Tor. Ac. Sc. At. 35 (1900) 285- or 443-.
- Corresponding points on 2 curves, theorems. *Zeuthen, H. G.* [1870] Mth. A. 3 (1871) 150-, 323-.
- — — — —, Zeuthen's theorem. *Weiss, W.* Mth. A. 29 (1887) 382-.
- — — — —, —, deduction from. *Brodén, T.* Stockh. Öfv. (1893) 345-.
- Cremona transformations with fixed curves. *Doehlemann, K.* Mth. A. 39 (1891) 567-.
- Curve, genus 0, binary forms represented on. *Maisano, G.* Palermo Cir. Mt. Rd. 1 (1887) 14-.
- , — 1, cyclic relations of points on. *Gegenbauer, L.* Mh. Mth. Ps. 4 (1893) 330.
- , — 3, and uniform functions of 2 variables. *Picard, É.* C. R. 93 (1881) 835-.
- , —  $p, 2q$  points on, problem. *Plaszyski, J.* C. R. 130 (1900) 105-.
- Curves, any genus, linear systems. *Jung, G.* [1887] A. Mt. 15 (1887-88) 277-.
- , genus 0, algebraic forms in theory. *Igel, B.* Wien Ak. Sb. 89 (1884) (Ab. 2) 218-.
- , —, families. *Lersch, M.* Mh. Mth. Ps. 2 (1891) 465-.
- , — 1. *Humbert, G.* C. R. 97 (1883) 989-, 1042-, 1186-.
- , — — — —, *Schlesinger, O.* C. R. 107 (1888) 224-.
- , —, involutions on. *Weyr, E.* Wien Ak. Sb. 101 (1892) (Ab. 2a) 1506-.
- , —, —, and Steiner's polygons. *Weyr, E.* Wien Ak. Sb. 101 (1892) (Ab. 2a) 1457-, 1695-.
- , —, parametric representation. *Duarte Leite, —.* G. Teix. J. Sc. 9 (1889) 3-; Fsch. Mth. (1888) 716.
- , —, —, symbolical calculus on. *Czuber, E.* [1894] D. Mth. Vr. Jbr. 4 (1897) 100-.
- , —, —, — — — — — *Weyr, E.* Wien Ak. Sb. 198 (1894) (Ab. 2a) 365-.
- , —, —, systems. *Martinetti, V.* Mil. I. Lomb. Rd. 20 (1887) 264-, [854].
- , —  $> 1$ , hyperelliptic. *Küpper, K.* Prag Sb. (1896) (Mth.-Nt.) No. 48, 11 pp.
- , — 2, proof of theorem. *Esclabais, (le rév. père) — d'.* (xx) Brux. S. Sc. A. 5 (1881) (Pt. 2) 84-.



- Curves, genus  $p$ , normal and subnormal, and birational and uniform transformation. *Armenante, A., & Jung, G.* G. Mt. 7 (1899) 235-.
- , genera 4, 5, 6, allowing automorphic transformation. *Wiman, A.* [1895] Stockh. Ak. Hndl. Bh. 21 (Afd. 1) (1896) No. 3, 41 pp.
- of maximum genus, plane and skew. *Küpper, K.* Prag Sb. (1898) (Mth.-Nt.) 265-.
- , plane, decomposition of singularities, and genus. *Bertini, E.* Mil. I. Lomb. Rd. 21 (1898) 326-, 413-.
- , —, general theorem. *Guccia, G. B. C. R.* 107 (1898) 903-, 1030.
- , 2, related point to point projectively, are of same genus  $p$ , proof. *Bertini, E.* G. Mt. 7 (1899) 105-.
- , Riemann's surfaces in relation to. *Del Pezzo, P.* Palermo Cir. Mt. Rd. 6 (1892) 115-.
- and surfaces, points in theory. *Humbert, G.* Liouv. J. Mth. 10 (1894) 169-.
- — — — — (Humbert). *Painlevé, P.* Liouv. J. Mth. 10 (1894) 208-.
- , 3rd degree, curves of mth degree through  $3m-1$  points. *Halphen, G. H.* Mth. A. 15 (1879) 359-.
- , —, rational derivation on. *Story, W. E.* Am. J. Mth. 3 (1880) 356-.
- , —, recurring series of pentagons in. *Serret, P. C. R.* 115 (1892) 406-, 436-.
- , 4th degree, genus 3, parametric expression of coordinates. *Cayley, A. L.* Mth. S. P. 6 (1875) 81-.
- , nth degree. *Küpper, K.* Prag Ab. 3 (1890) No. 7, 25 pp.
- , —, maximum basis  $B$  for  $\mu$ -fold variety. *Küpper, C.* Mh. Mth. Ps. 6 (1895) 5-.
- "Curves," points on. *Segre, C. A.* Mt. 22 (1894) 41-.
- Cyclic curves, curvature, and projective geometry. *Schwarz, A.* Mh. Mth. Ps. 10 (1899) 250-; 11 (1900) 71-.
- Cyclic projective groups of points. *Lüroth, J.* Mth. A. 13 (1878) 805-.
- systems. *Bonsdorff, E. [E. J.]* [1879] Helsingf. Acta 11 (1880) 327-.
- Double planes which can be represented on single plane. *Noether, M.* Mth. A. 83 (1889) 525-.
- Elliptic curves, geometry on. *Castelnuovo, G.* Tor. Ac. Sc. At. 24 (1889) 4-.
- Genus and adjoint curves of algebraic curve, method of determining. *Tikhomandritsky, —.* Bll. Sc. Mth. 17 (1898) 51-; Par. Ec. Norm. A. 10 (1893) 151-.
- , conservation in uniform transformations. *Halphen, G. H.* [1875] Par. S. Mth. Bll. 4 (1876) 29-.
- , —, (1, 1) transformation of plane curve. *Schubert, H. C. H.* Mth. A. 16 (1880) 180-.
- of curves. *Baltzer, R.* (ix) Leip. Mth. Ps. B. 25 (1873) 523-.
- — —. *Halphen, G. H.* As. Fr. C. B. 4 (1875) 237-.

- Genus of curves corresponding to points in plane involutions of any class. *Martinetti, V.* Palermo Cir. Mt. Rd. 4 (1890) 30-, 126-.
- , etc., of curves, Plücker's symbols for. *Zahradnik, K.* Časopis 2 (\*1878) 172-, 266-; Ftschr. Mth. (\*1873) 414.
- of plane triangular curves. *Jamet, V.* Par. S. Mth. Bll. 16 (1888) 132-.
- set of curves. *Zeuthen, H. G.* Palermo Cir. Mt. Rd. 3 (1889) 171-.
- skew curves. *Salvatore-Dino, N.* Nap. Rd. 18 (1879) 133-.

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- Paolis, R. de.* Rm. R. Ac. Linc. Mm. 1 (1877) 511-.
- Castelnuovo, G.* Tor. Ac. Sc. At. 24 (1889) 348-.
- Bertini, E.* Tor. Ac. Sc. At. 26 (1891) 118-.
- Valentiner, H.* Sk. Nt. F. (1892) 347-; Ftschr. Mth. (1892) 660.
- Küpper, C.* Mh. Mth. Ps. 6 (1895) 127-.
- Macaulay, F. S. L.* Mth. S. P. 26 (1895) 495-.
- Hardcastle, (Miss) F.* B. A. Rp. (1900) 121-.
- (de Paolis, 1877.) *Scott, (Miss) C. A.* [1900] N. Y. Am. Mth. S. Bll. 7 (1901) 24-.
- with bibliography. *Hardcastle, (Miss) F. N.* Y. Am. Mth. S. Bll. 4 (1898) 390-.
- Cayley-Brill theorem, new proof. *Sporer, B.* Z. Mth. Ps. 89 (1894) 223-.
- on circle. *Kantor, S.* [1878] Mth. A. 14 (1879) 323-.
- curves of 3rd degree. *Weyr, Em.* Z. Mth. Ps. 15 (1870) 344-.
- — — — —, 8th point not determined by 7. *Cayley, A.* Mess. Mth. 21 (1892) 132-.
- — — — —, relation between 10 points. *Weddle, T.* Camb. and Dubl. Mth. J. 5 (1850) 236-.
- — — — —. *Reiss, M.* [1867] Mth. A. 2 (1870) 413-.
- — — mth degree, genus  $p$ , cut by  $\infty^2$  lines. *Küpper, K.* Prag Sb. (1887) (Mth.-Nt.) 477-, 609-.
- determination. *Charles, M. C. B.* 73 (1871) 927-, 970-.
- harmonic, on rational curves of 3rd and 4th degrees. *Zahradnik, K.* Prag Sb. (1874) 12-.
- involution triplets. *Weyr, E. J.* [1883] Wien Ak. Sb. 88 (1884) (Ab. 2) 436-.
- involutory. *Vries, J. de.* Amst. Ak. Vs. M. 6 (1889) 92-; Arch. Néerl. 23 (1889) 355-.
- series, irrational. *Amodeo, F. A.* Mt. 20 (1892-93) 227-.
- of 1st order, anharmonic ratio of 4 pairs of points. *Klein, B.* Z. Mth. Ps. 28 (1883) 252-.
- irrational series. *Castelnuovo, G.* Rm. R. Ac. Linc. Rd. 7 (1891) (Sem. 2) 294-.
- linear. *Rosanes, J.* Crelle J. Mth. 88 (1880) 241-.
- series. *Bertini, E.* A. Mt. 22 (1894) 1-.
- , multiples. *Castelnuovo, G.* Palermo Cir. Mt. Rd. 7 (1893) 89-.

minimum abnormal, on curve  $C^n$ . *Küpper, C.* Prag Sb. (1892) (*Mth.-Nt.*) 408-.

primitive and imprimitive, on curve  $C_p^n$ . *Küpper, K.* Prag Sb. (1897) (*Mth.-Nt.*) No. 31, 14 pp.

projective, on same straight line. *Sidler, G.* Zür. Vjschr. 9 (1864) 217-.

on rational curves. *Weyr, Em.* Prag Sb. (1873) 70-.

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on skew curve intersected by surfaces, comparison with those of residual curves. *Rohn, K.* Leip. Mth. Ps. B. 49 (1897) 627-.

special systems, on particular type of base-curve. *Hardcastle, (Miss) F.* [1897] L. Mth. S. P. 29 (1898) 182-.

on straight line, and generation of plane curves. *Schumacher, R.* Crelle J. Mth. 110 (1892) 230-; 111 (1893) 254-.

$n$ th order, with base on curve of  $m$ th degree. *Charles, M.* C. R. 45 (1857) 393-.

$G_4^1$ , on sextic curve with 5 double points. *Cayley, A.* [1874] Mth. A. 8 (1875) 359-.

$g^{(2)}$  on curves  $C_p^n$ . *Küpper, C.* Prag Sb. (1892) (*Mth.-Nt.*) 264-.

( $m, n$ ) homographies, and double elements. *Weyr, Em.* Prag Sb. (1869) (pt. 2) 33-.

Homography of 2nd kind. *Castelnuovo, G.* Ven. I. At. (1886-87) 1041-.

— on skew cubic. *Deruyts, F.* Brux. Ac. Bll. 17 (1889) 312-.

— — — — — *Aschieri, F.* Mil. I. Lomb. Rd. 23 (1890) 812-.

Intersection of 2 cones, and problem of Steiner's on plane curves. *Beck, A.* Zür. Vjschr. 38 (1893) 199-, 266-.

— curve with non-adjoint curves, systems of points. *Noether, M.* Mth. A. 15 (1879) 507-.

— 2 curves at a singular point. *Guccia, G. B.* C. R. 107 (1888) 656-, 766.

— curves, systems of points. *Bacharach, J.* [1879] Erlang. Ps. Md. S. Sb. 12 (1880) 12-.

Intersections of curves. *Krey, H.* Z. Mth. Ps. 22 (1877) 396-.

— of 3rd and 4th degrees with conics. *Rohn, K.* Dresden Isis Sb. (1898) 24.

— plane curves. *Scott, (Miss) C. A.* N. Y. Am. Mth. S. Bll. 4 (1898) 260-.

— — — — — *Macaulay, F. S.* N. Y. Am. Mth. S. Bll. 4 (1898) 540-.

— — — — — multiplicities in. *Segre, C. G.* Mt. 36 (1898) 1-.

## Involutions.

*Hearn, G. W.* Mathematician 2 (1847) 63-.

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— *Fairon, J.* Brux. Ac. Bll. (1900) 950-.

biquadratic, degenerate forms, and 7 systems of conics having 4-point contact with curve of 4th degree. *Weyr, E. J.* Wien Ak. Sb. 88 (1881) (*Ab. 2*) 807-.

—, 1st rank. *Weyr, E. J.* Wien Ak. Sb. 83 (1881) (*Ab. 2*) 800-.

—, 2nd rank, and their typical curves. *Weyr, E. J.* Wien Ak. Sb. 81 (1880) (*Ab. 2*) 1007-.

—, 3rd rank, and application to curves of 4th degree. *Le Paige, C. M. M. H. H.* Prag Sb. (1881) 81-.

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cubic. *Le Paige, C. M. M. H. H.* Wien Ak. Sb. 81 (1880) (*Ab. 2*) 845-; 83 (1881) (*Ab. 2*) 351-; Liège S. Sc. Mm. 11 (1885) No. 1, 19 pp.

— *Berzolari, L.* Nap. Rd. 30 (1891) 35-, 71-.

— *Vries, J. de.* Amst. Ak. Vs. 3 (1895) 64-.

— *Klug, L.* Orv.-Termt. Éts. (*Termt. Szak*) (1898) 95-, (*Rv.*) 42-.

— and biquadratic. *Milínowski, —.* Z. Mth. Ps. 19 (1874) 205-.

—, for conic. *Kantor, S.* Prag Sb. (1878) 312-.

—, conjugate. *Servais, C.* Brux. Ac. Bll. 20 (1890) 272-.

—, fundamental problem. *Weyr, Em.* Prag Sb. (1872) 28-.

— and higher. *Vries, J. de.* Mh. Mth. Ps. 5 (1894) 1-.

—, involving anharmonic properties. *Weyr, Em.* Mil. I. Lomb. Rd. 4 (1871) 206-.

—, in plane of complex variable. *Vries, J. de.* Palermo Cir. Mt. Rd. 5 (1891) 289-.

—, relation between singular elements. *Le Paige, C. M. M. H. H.* Wien Ak. Sb. 81 (1880) (*Ab. 2*) 159-.

— — — — — (*Le Paige*). *Weyr, E. J.* Wien Ak. Sb. 81 (1880) (*Ab. 2*) 162-.

— — — — —, projective. *Weyr, E. J.* Wien Ak. Sb. 73 (1876) (*Ab. 2*) 654-.

—, on skew curves of 3rd degree. *Vries, J. de.* N. Arch. Wisk. 4 (1899) 101-.

—, theory. *Weyr, E. J.* [1874] Prag Ab. 7 (1875) (*Mth.*) 54 pp.

on curves of 3rd degree. *Weyr, E.* Časopis 9 (\*1880) 145-; Fsch. Mth. (\*1880) 484.

— — — — — *Küpper, C.* Prag Ab. 12 (1885) (*Mth.*) No. 1, 18 pp.

— — — — — *Martinetti, V.* G. Mt. 23 (1885) 37-.

— — — — — 4th degree. *Le Paige, C.* Brux. S. Sc. A. 8 (1884) (*Pt. 2*) 87-.

fundamental, on rational curves. *Stahl, W.* Crelle J. Mth. 104 (1889) 38-.

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— *August, F.* Arch. Mth. Ps. 55 (1873) 337-.

— *Eggers, H.* Arch. Mth. Ps. 55 (1873) 341-.

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- higher. *Le Paige, C. M. M. H. H.* [1877] (xx) *Brux. S. Sc. A.* 2 (1878) (Pt. 1) 54-; (Pt. 2) 25-.
- , groups of points common to 2. *Le Paige, C.* *Brux. Ac. Bll.* 11 (1886) 121-.
- , and invariants of binary forms. *Le Paige, C. M. M. H. H.* *Brux. Ac. Bll.* 44 (1877) 231-.
- , multiple points. *Le Paige, C. M. M. H. H.* *Brux. Ac. Bll.* 46 (1878) 247-.
- , represented on common basis. *Weyr, E.* *J. Liège S. Sc. Mm.* 10 (1883) (No. 3) 8 pp.
- , on skew curves of genus 1. *Weyr, E.* *Wien Ak. Sb.* 100 (1891) (Ab. 2a) 589-.
- and homographies, higher. *Le Paige, C. G.* *Teix. J. Sc.* 5 (\*1888) 27-, 77-.
- multiple. *Vályi, G.* *Mth. Term. Ét.* 12 (1894) 394-; 13 (1895) 408-; 14 (1896) 381-; *Mth. Nt. B. Ung.* 13 (1897) 244-, 259-, 343-.
- multiply infinite, belonging to curve, linearity. *Castelnuovo, G.* *Tor. Ac. Sc. At.* 28 (1893) 727-.
- with ordinary singularities. *Guccia, G. B.* *Palermo Cir. Mt. Rd.* 7 (1893) 49-; 8 (1894) 227-.
- plane. *Bertini, E.* [1882] *Mil. I. Lomb. Rd.* 16 (1883) 89-, 190-.
- , new theorem. *Berzolari, L.* *Palermo Cir. Mt. Rd.* 3 (1899) 145-.
- quadruple, on curves of 4th degree. *Vries, J. de.* *Amst. Ak. Vs. M.* 4 (1888) 307-; *Arch. Néerl.* 23 (1889) 93-.
- rational, number on curve of given genus. *Castelnuovo, G.* *Rm. R. Ac. Linc. Rd.* 5 (1889) (Sem. 2) 130-.
- on skew curves of 4th degree. *Le Paige, C.* *C. R.* 98 (1884) 353-.
- surfaces. *Weyr, E. J.* *Brux. Ac. Bll.* 3 (1882) 472-.
- theory. *Cayley, A.* [1864] *Camb. Ph. S. T.* 11 (1871) 21-.
- , *Tognoli, O.* *G. Mt.* 20 (1882) 270-.
- , *Berzolari, L.* *Nap. Rd.* 30 (1891) 85-.
- various orders, in systems of 1st species. *Battaglini, G.* *Nap. Ac. At.* 1 (1863) No. 12, 14 pp.
- , —, — 2nd species. *Battaglini, G.* *Nap. Rd.* 4 (1865) 226-.
- 3rd and 4th classes. *Martinetti, V.* *A. Mt.* 12 (\*1883-84) 73-.
- n*th degree. *Weyr, Em.* *G. Mt.* 10 (1872) 165-.
- and *k*th rank. *Weyr, E. J.* *Wien Ak. Sb.* 79 (1879) (Ab. 2) 680-.
- , —, —, number of groups in. *Lerch, M.* *Prag Sb.* (1885) (Mth.-Nt.) 597-.
- 2nd rank. *Weyr, E. J.* *Wien Ak. Sb.* 83 (1881) (Ab. 2) 349-.

Involuntary pairs in multiform configurations, number. *Weyr, Em.* [1871] *Crelle J.* 74 (1872) 189-.

— plane transformations. *Martinetti, V. A.* *Mt.* 13 (1885) 53-.

— —, double. *Bertini, E.* *Mil. I. Lomb. Rd.* 22 (1889) 771-.

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- Involuntary plane transformations, uniform. *Bertini, E.* [1876] *A. Mt.* 8 (1877) 11-, 146, 244-.
- —, —. *Caporali, E.* *Nap. Rd.* 18 (1879) 212-.
- —, —. *Bertini, E.* *Mil. I. Lomb. Rd.* 13 (1880) 443-.
- —, —. *Bobek, K.* *Wien Ak. Sb.* 91 (1885) (Ab. 2) 476-.
- —, —, application to determine involutions of 5th class. *Berzolari, L.* *A. Mt.* 16 (1888-89) 191-, 335.
- relation arising from 2 curves. *Fouret, G.* *C. R.* 96 (1883) 1213-.
- Moduli of class of algebraic equations. *Brill, A.* *Mth. A.* 1 (1869) 401-; 2 (1870) 471-.
- equations or curves of given genus, number. *Casorati, F., & Cremona, L.* *Mil. I. Lomb. Rd.* 2 (1869) 620-.
- Normal curves for  $p=5, 6, 7$ . *Noether, M.* *Mth. A.* 26 (1886) 143-.
- space and maximum genus for curves of *m*th degree. *Amodeo, F.* *Nap. Rd.* 37 (1896) 433-.
- trigonal curves, plane. *Amodeo, F.* *C. R.* 130 (1900) 1744-; 131 (1900) 400.
- Null system, significance for cubic involutions. *Weyr, E. J.* [1881] *Wien Ak. Sb.* 84 (1882) (Ab. 2) 1264-.
- , 2nd degree. *Ameseder, A.* *Wien Ak. Sb.* 83 (1881) (Ab. 2) 885-.
- —, —, Ameseder's, applications. *Oppenheimer, H.* *Arch. Mth. Ps.* 13 (1895) 268-.
- —, —, general. *Ameseder, A.* *Crelle J. Mth.* 97 (1884) 62-.
- Polar curves. *Plücker, J.* *Crelle J.* 12 (1834) 105-.
- groups. *Weyr, E. J.* *Wien Ak. Sb.* 81 (1880) (Ab. 2) 841-.
- —, geometric representation of theory. *Waelisch, E.* [1883] *Wien Ak. Sb.* 88 (1884) (Ab. 2) 418-.
- Polygonal curves. *Amodeo, F.* *A. Mt.* 21 (1893) 221-; 24 (1896) 1-; *Nap. Ac. At.* 9 (1899) No. 4, 21 pp.; *Nap. Rd.* 39 (1900) 174-.
- , *n*th degree, genus *p*. *Küpper, C.* *Prag Sb.* (1895) (Mth.-Nt.) No. 25, 16 pp.; (1896) (Mth.-Nt.) No. 23, 9 pp.
- —, —, — ( $p > 1$ ). *Küpper, C.* *Mh. Mth. Ps.* 8 (1897) 57-.
- and skew curves, relations between. *Küpper, C.* *Prag Sb.* (1896) (Mth.-Nt.) No. 4, 11 pp.

## PRINCIPLE OF CORRESPONDENCE.

- Chasles, M.* *C. R.* 62 (1866) 579-.
- Cayley, A.* [1867] *Phil. Trans.* 158 (1868) 145-.
- Chasles, M.* *C. R.* 72 (1871) 577-.
- Zeuthen, H. G.* *Bll. Sc. Mth. As.* 5 (1873) 186-.
- Cayley, A.* *QJ. Mth.* 15 (1878) 32-.
- Burkhardt, H.* *C. R.* 126 (1898) 1854-.
- application. *Vahlen, K. T.* *Crelle J. Mth.* 118 (1897) 251-.

- application to analytical solutions. *Saltel, L.* C. R. 82 (1876) 324-.
- to finding class of evolute and caustic of curve. *Charles, M.* C. R. 72 (1871) 394-.
- — degree of envelope of curve or surface. *Saltel, L.* C. R. 83 (1876) 608-.
- — — locus defined by algebraic conditions. *Saltel, L.* C. R. 82 (1876) 63-; 83 (1876) 529-.
- — — number of points of intersection of 2 curves. *Charles, M.* C. R. 75 (1872) 736-; 76 (1873) 126-.
- — — — — 3 surfaces, or of skew curve with a surface. *Fouret, G.* (ix) Par. S. Mth. Bil. 1 (1873) 122-, 258-.
- — — — — plane in which 3 curves of 3 given systems touch. *Fouret, G.* Par. S. Mth. Bil. 5 (1877) 130-.
- — — — solutions of  $n$  algebraic equations in  $n$  unknowns. *Fouret, G.* C. R. 78 (1874) 183-.
- — — new developments due to. *Saltel, L.* Brux. Ac. Bil. 45 (1878) 102-.
- to proof of Bezout's theorem. *Saltel, L.* C. R. 81 (1875) 884-.
- — segments. *Charles, M.* C. R. 83 (1876) 467-, 495-, 519-.
- — — on tangents. *Charles, M.* C. R. 81 (1875) 253-.
- Cayley and Brill's. *Zeuthen, H. G.* Mth. A. 40 (1892) 99-.
- character. *Charles, M.* C. R. 78 (1874) 577-.
- Charles's, analytical extension. *Saltel, L.* C. R. 80 (1875) 1064-.
- complementary theorem applied to determination, without calculation, of order of multiplicity of point on given locus. *Saltel, L.* C. R. 81 (1875) 1047-.
- definition, and applications. *Saltel, L.* [1879] Bordeaux S. Sc. Mm. 4 (1882) 1-.
- degree of multiplicity of solutions, and application to Plücker's relations. *Zeuthen, H. G.* N. A. Mth. 6 (1867) 200-.
- generalisation, applied to elimination. *Saltel, L.* N. A. Mth. 12 (1873) 565-.
- generalised. *Bobek, K.* Wien Ak. Sb. 93 (1886) (Ab. 2) 899-.
- for groups of  $n$  points and  $n$  rays. *Schubert, H. C. H.* Mth. A. 12 (1877) 180-.
- and law of decomposition applied to skew curves, in particular to locus of centres of osculating spheres of given skew curve. *Saltel, L.* Brux. Ac. Bil. 43 (1877) 266-.
- of plane and space. *Zeuthen, H. G.* C. R. 78 (1874) 1553-.
- and systems of curves. *Segre, C.* Bb. Mth. (1892) 83-.
- theory of characteristics. *Legoux, A.* Toul. Ac. Sc. Mm. 8 (1886) 208-.
- of 2 variables. *Charles, M.* C. R. 41 (1855) 1097-.

Projective generation of groups of curves  $C^{m+n}$ . *Küpper, K.* Prag Sb. (1897) (Mth.-Nt.) No. 5, 15 pp.

- Projective properties of curves. *Juel, C.* [1899] Kjöb. Dn. Vd. Selsk. Skr. 10 (1899-1902) 1-. [With French résumé.]
- Rational curve, plane, 3rd degree, representation on conic. *Weyr, E. J.* Wien Ak. Sb. 79 (1879) (Ab. 2) 429-.
- —, skew, 4th degree. *Rohn, K.* Leip. Mth. Ps. B. 42 (1890) 208-; 43 (1891) 1-.
- —, —, automorphic transformation. *Brambilla, A.* Mil. I. Lomb. Rd. 20 (1887) 780-.
- —, —, —, harmonic centre of "quadruple" given by. *Weyr, E. J.* Wien Ak. Sb. 81 (1880) (Ab. 2) 1218-.
- —, —, —, representation on conic. *Weyr, E. J.* [1875-76] Wien Ak. Sb. 72 (1876) (Ab. 2) 686-; 73 (1876) (Ab. 2) 208-.
- curves. *Davis, E. W.* J. H. Un. Cir. [3] (1884) 123.
- with double point or cusp, Abel's theorem. *Johansson, N. A.* Föchr. Mth. (1885) 405.
- — in  $n$ -flat space. *Bissing, G.* J. H. Un. Cir. [3] (1884) 123.
- —, generation. *Jonquière, E. de.* C. R. 105 (1887) 1148-.
- —, plane. *Weyr, E.* Časopis 8 (\*1879) 193-; Föchr. Mth. (\*1879) 488.
- —, —, representations on one another. *Weyr, E. J.* Wien Ak. 15 (1878) 228-.
- —, degrees  $n$  and  $n-3$ , intersections. *Fabry, E.* Par. Éc. Norm. A. 13 (1896) 107-.
- —, skew, singularities of 2nd order. *Weyr, E. M.* A. Mt. 4 (1870-71) 328-.
- Reducible curves. *Noether, M.* Erlang. Ps. Md. S. Sb. 17 (1885) 13-; Acta Mth. 8 (1886) 161-.
- Residuation in regard to curve of 3rd degree. *Cayley, A.* [1873] (vii) Mess. Mth. 3 (1874) 62-.
- theorem (intersections of plane curves at multiple points). *Macaulay, F. S. L.* Mth. S. P. 31 (1900) 381-.
- —, Noether's theorem, and the Riemann-Roch theorem. *Macaulay, F. S.* [1899] L. Mth. S. P. 31 (1900) 15-.
- Residues in canonical series of adjoint curves of degree  $m-3-a$ . *Amodeo, F.* Rm. B. Ac. Linc. Rd. 2 (1893) (Sem. 1) 528-.
- relative to asymptotes. Quadrature of curves dependent on genus. *Marie, M.* C. R. 76 (1873) 943-.
- Singular points. *Plücker, J.* [1836] Liouv. J. Mth. 2 (1837) 11-.
- — and tangents, influence on degree and class of plane curves. *Łazarzski, M.* Krk. Ak. (Mt.-Prz.) Rz. 15 (1887) 278-; Föchr. Mth. (1887) 607.
- Singularities of plane curves, higher. *Smith, H. J. S. L.* Mth. S. P. 6 (1874-75) 153-.
- — —, and new species of curve. *Brill, A.* [1879] Mth. A. 16 (1880) 348-.
- Skew curve, 4th degree, with double point, representation on conic. *Weyr, E. J.* [1878] Wien Ak. Sb. 78 (1879) (Ab. 2) 891-.
- —, —, —, property of 9 points, etc. *Petot, A.* C. R. 98 (1884) 1245-.
- —, 5th degree, genus 1. *Montesano, D.* Nap. Rd. 27 (1888) 181-.

- Skew curve, 6th degree, genus 1, arising from 2 trilinear relations. *London, F. Mth. A.* 45 (1894) 545-.
- curves. *Küpper, K. Prag Ab.* 4 (1893) No. 5, 16 pp., No. 7, 15 pp.
- , genus 0. *Tognoli, O. G. Mt.* 11 (1873) 180-.
- , —. *Saltel, L. C. R.* 80 (1875) 1824-.
- , —, double points. *Brill, A. Mth. A.* 3 (1871) 456-.
- of given degree, maximum genus. *Bobek, K. Wien Ak. Sb.* 98 (1886) (Ab. 2) 13-.
- , 5th degree, genus 1. *Weyr, E. Wien Ak. Sb.* 90 (1886) (Ab. 2) 206-; 92 (1886) (Ab. 2) 498-; 97 (1889) (Ab. 2a) 592-.
- , 6th degree, genus 1. *Weyr, E. Wien Ak. Sb.* 99 (1891) (Ab. 2a) 932-; 100 (1891) (Ab. 2a) 457-.
- Steiner's polygons on curve of 3rd degree. *Küpper, C. [1878-84] Prag Ab.* 6 (1874) 39 pp.; *Mth. A.* 24 (1884) 1-.
- — — — —. *Martinetti, V. Palermo Cir. Mt. Rd.* 5 (1891) 109-.
- porismatic polygons determined by (2, 2) relationship. *Weyr, E. [1869] Crelle J.* 71 (1870) 18-; 73 (1871) 87-.
- System of 3 doubly quadratic relations between 3 variables. *Fontené, G., & Bricard, R. N. A. Mth.* 18 (1899) 487-.
- Transformation of curve to one without multiple points. *Pieri, M. Rv. Mt.* 4 (1894) 40-.
- — — — —. *Levi, B. Rm. B. Ac. Linc. Rd.* 7 (1898) (Sem. 1) 111-.
- — — systems in plane, uniform periodic. *Kantor, S. Acta Mth.* 19 (1895) 115-.
- method, reduction of singularities. *Vessiot, E. Par. S. Mth. Bll.* 22 (1894) 208-.
- of plane curves, uniform. *Voss, (Dr) A. Gött. Nr.* (1873) 414-.
- Transformations of curves, birational. *Poincaré, H. C. R.* 117 (1893) 18-.
- in plane, birational, finite groups. *Wiman, A. Mth. A.* 48 (1897) 195-.
- , uniform automorphic, curves admitting. *Noether, M. Mth. A.* 20 (1882) 59-; 21 (1883) 138-.
- , — periodic, foundations for theory. *Kantor, S. Nap. Ac. At.* 1 (1888) No. 7, 264 pp.; 4 (1891) No. 2, 74 pp.
- Trigonal curves. *Cavassoni, L. Mil. I. Lomb. Rd.* 32 (1899) 777-.
- Triplets of points on cisloid. *Zahradnik, K. Casopis* 12 (\*1883) 105-; *Arch. Mth. Ps.* 6 (1886) 392-.
- Uniform functions connected by an algebraic relation, property. *Picard, E. Bll. Sc. Mth. As.* 4 (1880) (Pt. 1) 416-.
- Weierstrass's points on algebraic curve. *Haure, M. Par. Ec. Norm. A.* 13 (1896) 115-.
- — — — —. *Segre, C. Rm. B. Ac. Linc. Rd.* 8 (1899) (Sem. 2) 89-.

# 8040 Groups of curves and points on an algebraic surface; genus of surfaces. (See also 7640.)

- Castelnuovo, G. Mil. I. Lomb. Rd.* 24 (1891) 127-; 307-.
- Enriques, F. [1898-96] Tor. Ac. Sc. Mm.* 44 (1894) 171-; *Rm. S. It. Mm.* 10 (1896) 1-.
- Castelnuovo, G., & Enriques, F. Mth. A.* 48 (1897) 241-.
- Asymptotic curves on skew surfaces. *Jung, V. Casopis* 20 (1891) 294-; *Fachr. Mth.* (1891) 824.
- Class of surfaces. *Humbert, G. Palermo Cir. Mt. Rd.* 3 (1889) 277-; 4 (1890) 54-, 71, 72.
- — — (Humbert). *Castelnuovo, G. Palermo Cir. Mt. Rd.* 4 (1890) 69-, 71-, 195-.
- — — (Castelnuovo). *Guccia, —. Palermo Cir. Mt. Rd.* 4 (1890) 71.
- — —. *Noether, M. Palermo Cir. Mt. Rd.* 4 (1890) 299-.
- Collineation groups on Kummer's surfaces. *Kantor, S. Am. J. Mth.* 19 (1897) 96-.
- Continuous series of curves on regular surface. *Enriques, F. Palermo Cir. Mt. Rd.* 13 (1899) 95-.
- Correspondence, point to point, class of surfaces representable on plane by. *Brambilla, A. Mil. I. Lomb. Rd.* 21 (1888) 334-, 511-.
- between points of plane and those of elliptic paraboloid. *Ciamberlini, C. G. Mt.* 32 (1894) 69-.
- , projective, between forms of 2 dimensions. *Paolis, R. de. Rm. B. Ac. Linc. Rd.* 3 (1894) (Sem. 2) 225-.
- , uniform, of algebraic configurations. *Noether, M. Mth. A.* 2 (1870) 293-; 8 (1875) 495-.
- , —, — surfaces, 2 criteria. *Nöther, M. Gött. Nr.* (1873) 248-.
- , —, —, and differential equations, 2nd order, with fixed critical points. *Painlevé, P. C. R.* 117 (1893) 611-.
- Correspondences, uniform, curves and surfaces admitting. *Kantor, S. C. R.* 100 (1885) 343-.
- (1, 4) between points on curves of surfaces of 3rd degree. *Walsch, G. [1894] D. Mth. Vr. Jbr.* 4 (1897) 113-.
- Curve of 4-point contact on surface. *Voss, A. E. Mth. A.* 9 (1876) 483-.
- Curves on cones, genus. *Sturm, R. Mth. A.* 19 (1882) 487-.
- — surfaces. *Brunel, —. Bordeaux S. Sc. Mm.* 8 (1893) iv.
- and surfaces, points in theory. *Humbert, G. Liouv. J. Mth.* 10 (1894) 169-.
- — — — — (Humbert). *Painlevé, P. Liouv. J. Mth.* 10 (1894) 203-.
- Developables, curves on. *Künzler, G. Sch. Nf. Gs. Vh.* (1898) 47.
- Double planes of genus 1. *Enriques, F. Rm. S. It. Mm.* 10 (1896) 201-.
- Envelope with  $n$  parameters connected by  $n-2$  relations, degree. *Saltel, L. C. R.* 83 (1876) 894-; *Brux. Ac. Bll.* 43 (1877) 24-, 31-.
- Genus of certain surfaces. *Cayley, A. Mth. A.* 3 (1871) 526-.

- Groups of points in involution marked on surface. *Le Paige, C. M. M. H. H. C. R.* 99 (1884) 537-.
- — — plane, and effect in determining curves. *Macaulay, F. S. L. Mth. S. P.* 29 (1896) 678-.
- — — on surface, impossibility of some series. *Picard, É. C. R.* 126 (1898) 1383-.
- — — straight lines on surfaces of higher degree. *Affolter, F. G. Mth. A.* 27 (1886) 277-; 29 (1887) 1-.
- Homaloidal surfaces containing groups of conics. *Montesano, D. Mil. I. Lomb. Rd.* 24 (1891) 889-.
- — — 4th and 5th degrees, with no multiple lines. *Montesano, D. Nap. Rd.* 39 (1900) 158-.
- Hyperelliptic curves, surfaces containing net of. *Castelnuovo, G. Rm. B. Ac. Linc. Rd.* 3 (1894) (Sem. 1) 478-.
- surfaces, curves on. *Humbert, G. Liouv. J. Mth.* 9 (1893) 29-, 361-.
- Intersection of 3 surfaces in a singular point. *Guccia, G. B. Rm. B. Ac. Linc. Rd.* 5 (1889) (Sem. 1) 456-.
- Intersections of 3 surfaces. *Berzolari, L. A. Mt.* 24 (1896) 165-.
- Invariant number in theory of surfaces. *Picard, É. C. R.* 116 (1893) 285-.
- numbers in theory of surfaces. *Picard, É. C. R.* 119 (1894) 1169-; 122 (1896) 101-.
- Involution, generalised. *Cayley, A. Camb. and Dubl. Mth. J.* 2 (1847) 52-.
- of higher dimensions. *Vančěk, J. S., & Vančěk, M. N. C. R.* 99 (1884) 742-, 856-, 909-.
- and rational homography, theory. *Deruyts, F. Liège S. Sc. Mm.* 17 (1892) No. 3, 208 pp.
- Involutions, plane. *Chizzoni, F. Rm. B. Ac. Linc. Mm.* 19 (1884) 301-.
- — —, rationality. *Castelnuovo, G. Rm. B. Ac. Linc. Rd.* 2 (1893) (Sem. 2) 205-; *Mth. A.* 44 (1894) 125-.
- Involutory transformations, groups. *Montesano, D. Ven. I. At.* (1887-88) 1425-.
- Linear genus of surface and classification to which it leads. *Castelnuovo, G. Rm. B. Ac. Linc. Rd.* 6 (1897) (Sem. 1) 372-, 406-.
- systems of curves on surface. *Castelnuovo, G. Rm. S. It. Mm.* 10 (1896) 82-; *A. Mt.* 25 (1897) 235-.
- — — lines on surface. *Picard, É. Palermo Cir. Mt. Rd.* 13 (1899) 344-.
- Moduli of class of surfaces, number. *Noether, M. Berl. Ak. Sb.* (1888) 123-.
- Multiple curves and developables of certain surface. *Lazzari, G. Ven. I. At.* (1887-88) 171-.
- — — of surfaces. *Nöther, M.* [1871] *A. Mt.* 5 (1871-73) 163-.
- Rational curves, surfaces with systems. *Nöther, M.* [1870] *Mth. A.* 3 (1871) 161-.
- Reciprocal of surface, degree. *Salmon, G.* [1847-55] *Camb. and Dubl. Mth. J.* 2 (1847) 65-; *Ir. Ac. T.* 23 (1859) 461-.
- surfaces. *Cayley, A. Ir. Ac. P.* 7 (1858) 20-; *Phil. Trans.* 159 (1869) 201-; 162 (1872) 83-.
- Reciprocal surfaces. *Zeuthen, H. G. Mth. A.* 4 (1871) 638-.
- Riemann-Roch theorem extended to surfaces. *Noether, M. C. R.* 103 (1896) 734-.
- Ruled surfaces, double curve on. *Wiman, A. Acta Mth.* 19 (1895) 63-.
- — — of any genus. *Segre, C. Tor. Ac. Sc. At.* 22 (1886-87) 362-.
- — — with rational double curves. *Weyr, E. J.* [1881] *Wien Ak. Sb.* 84 (1882) (Ab. 2) 691-.
- — — 4th degree, curves on. *Williams, F. B.* [1900] *Am. Ac. P.* 86 (1901) 17-.
- — — 5th degree. *Schwarz, H. A.* [1866] *Crelle J.* 67 (1867) 23-.
- Singular lines of surfaces, generic points. *Levi, B. A. Mt.* 2 (1899) 127-.
- points. *Guccia, G. B. C. R.* 105 (1887) 741-.
- — — *Del Pezzo, P. Palermo Cir. Mt. Rd.* 6 (1892) 139-.
- — —, decomposition. *Segre, C. Tor. Ac. Sc. At.* 32 (1896) 521- or 781-; 33 (1897) 19-; *A. Mt.* 25 (1897) 1-.
- — — (Segre). *Del Pezzo, P. Nap. Ac. Pont. At.* 27 (1897) No. 4, 13 pp., No. 10, 7 pp.
- — —, resolution. *Levi, B. Tor. Ac. Sc. At.* 33 (1897) 56- or 66-.
- Singularities, reduction by birational transformations of space. *Pannelli, M. A. Mt.* 25 (1897) 67-.
- Skew curve, 4th degree, automorphic transformation, and correlation with developable of osculating planes. *Del Re, A. Tor. Ac. Sc. At.* 22 (1886-87) 901-.
- — — — —, correlations changing into developable of bitangent planes. *Del Re, A. Nap. Rd.* 26 (1897) 167-.
- — — — —, developable quartics and sextics occurring in automorphic transformation of. *Del Re, A. Nap. Rd.* 27 (1898) 37-.
- — — curves on hyperboloid of one sheet. *Cremona, L. C. R.* 52 (1861) 1319-.
- — — — —. *Chasles, M. C. R.* 53 (1861) 1077-, 1203-.
- — — surface of 3rd degree. *Clebsch, R. F. A. C. R.* 62 (1866) 1114-.
- — — surfaces. *Jonquières, E. de.* [1862] (viii) *A. Mt.* 5 (1863) 24-.
- — — — — of 3rd and 4th degrees. *Rohn, K. Leip. Mth. Ps. B.* 46 (1894) 84-; 49 (1897) 631-.
- surfaces of given degree, maximum genus. *Bobek, K. Wien Ak. Sb.* 96 (1888) (Ab. 2) 1024-.
- — — 2nd degree, homographic systems of points on. *Townsend, R.* [1867] *QJ. Mth.* 9 (1868) 249-, 296-.
- Surface, 3rd degree, representation on plane. *Dumont, F. N. A. Mth.* 15 (1896) 318-.
- — — 6th degree, genus -1. *Noether, M. Mth. A.* 21 (1883) 399-.
- — — 8th degree, genus 0. Systems of straight lines passing through given straight line. *Aschieri, F. G. Mt.* 12 (1874) 129-.
- — — (n-4)th degree, passing through double curve of surface, constancy of number of coefficients. *Clebsch, R. F. A. C. R.* 67 (1868) 1238-.

## 8040 Groups of Points

- Surface  $z^2=f(xy)$ , double planes with  $p^{(1)}=1$ .  
*Enriques, F.* Rm. R. Ac. Linc. Rd. 7 (1898) (Sem. 1) 234-, 253-.
- Surfaces admitting doubly infinite system of plane reducible sections. *Castelnuovo, G.* Rm. R. Ac. Linc. Rd. 3 (1894) (Sem. 1) 22-.
- and algebraic groups, theory. *Picard, É.* C. R. 120 (1895) 658-.
- containing curves of certain genus. *Castelnuovo, G., & Enriques, F.* C. R. 131 (1900) 789-.
- with double circular generation, determination. *Cosserat, E.* C. R. 130 (1900) 311-.
- on which families of conics lie. *Weiler, A.* Zür. Vjschr. 29 (1884) 223-.
- , genus 0. *Tognoli, O.* G. Mt. 11 (1873) 180-.
- , —. *Castelnuovo, G.* Rm. S. It. Mm. 10 (1896) 103-.
- , —, special configurations on. *Brunel, G.* [1899] Bordeaux S. Sc. PV. (1899-1900) 2-.
- , —  $p=0$ , representation on plane. *Armenante, A.* [1869] A. Mt. 4 (1870-71) 50-.
- , linear genus  $p^{(1)}=2$ . *Enriques, F.* Rm. R. Ac. Linc. Rd. 6 (1897) (Sem. 1) 139-.
- , —  $p^{(1)}=3$ . *Enriques, F.* Rm. R. Ac. Linc. Rd. 6 (1897) (Sem. 1) 169-.
- with plane sections elliptic curves. *Castelnuovo, G.* Rm. R. Ac. Linc. Rd. 3 (1894) (Sem. 1) 59-.
- hyperelliptic curves. *Castelnuovo, G.* Palermo Cir. Mt. Rd. 4 (1890) 73-.
- — rational. *Picard, É.* Par. S. Phlm. Bll. 2 (1878) 127-; Crelle J. Mth. 100 (1887) 71-.
- — —. *Guccia, G. B.* Palermo Cir. Mt. Rd. 1 (1887) 165-.
- — points corresponding, fundamental points of 2. *Zeuthen, H. G.* C. R. 70 (1870) 742-.
- — —, properties. *Zeuthen, H. G.* Mth. A. 4 (1871) 21-.
- — rational generators, class. *Humbert, G.* C. R. 116 (1893) 1850-.
- , representation on plane. *Clebsch, R. F. A.* Gött. Nr. (1870) 253-.
- , 2nd degree, curves on. *Halphen, G. H.* [1872] (x) Par. S. Mth. Bll. 1 (1873) 19-.
- , —, —. *Schoute, P. H.* As. Fr. C. R. (1879) 180-.
- , —, —, application of binary forms. *Laguerre, E.* [1872] (x) Par. S. Mth. Bll. 1 (1873) 31-.
- , —, —, hyperboloidal coordinates. *Cayley, A.* Ph. Mg. 22 (1861) 85-.
- , 3rd degree. *Clebsch, R. F. A.* [1865-69] Crelle J. 65 (1866) 359-; Mth. A. 1 (1869) 634-.
- , —, curves on. *Sturm, R.* Mth. A. 21 (1868) 457-.
- , 3rd and 4th degrees, Steiner's surface. *Küpper, K.* Prag Ab. 2 (1888) No. 10, 11 pp.
- Tacnodal points. *Korteweg, D. J.* Wien Ak. Sb. 98 (1890) (Ab. 2a) 1154-.
- Transformation of figures in space, method. *Vaněček, J. S.* C. R. 94 (1882) 1463-, 1538-.

## Transcendental Functions 8050

- Transformation of figures in space, method. *Vaněček, J. S., & Vaněček, M. N.* C. R. 95 (1882) 1049-, 1146-; 96 (1883) 1714-, 1773-.
- — rational surfaces. *Cayley, A.* [1870] Mth. A. 3 (1871) 469-.
- — surfaces, automorphic. *Picard, É.* C. R. 103 (1886) 517-.
- — —, and a fundamental number in theory of surfaces. *Picard, É.* C. R. 103 (1886) 549-.
- — —, and a class of differential equations. *Picard, É.* C. R. 103 (1886) 635-.
- Transformations, birational automorphic, surfaces with continuous group of. *Castelnuovo, G., & Enriques, F.* C. R. 121 (1895) 242-.
- , —, —, —, —. *Painlevé, P.* C. R. 121 (1895) 318-.
- , —, surfaces admitting double infinity. *Picard, É.* C. R. 103 (1886) 730-.
- , bi-uniform, of surfaces. *Painlevé, P.* C. R. 122 (1896) 874-.
- , rational, of space, determined by general surface of 3rd degree. *Loria, G.* Tor. Ac. Sc. At. 26 (1891) 275-.
- Uniform functions of 2 points, invariant by rational transformations. *Appell, P.* C. R. 96 (1883) 1643-.

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- Abelian functions and curves of any genus. *Buchheim, A.* L. Mth. S. P. 13 (1882) 180-.
- , genus 3. *Amstein, H.* Laus. S. Vd. Bll. 24 (1889) 99-.
- integrals and curves of 4th degree with 1 double point. *Roberts, W. R. W.* L. Mth. S. P. 25 (1894) 151-.
- , genus  $p=2$ , periods. *Kepiński, S.* Prace Mt.-Fiz. 9 (1898) 139-; Ftschr. Mth. (1898) 392.
- and plane curves. *Lindemann, C. L. F.* [1877] Crelle J. Mth. 84 (1878) 294-, 300-.
- , 1st species, plane curves rectifiable by. *Brodén, T.* Stockh. Ak. Hndl. Bh. 15 (Afd. 1) (1890) No. 5, 26 pp.
- and uniform correspondences on elliptic curves. *Patrassi, P.* G. Mt. 34 (1896) 195-.
- Abel's theorem, applications. *Michel, C.* C. R. 130 (1900) 885-.
- , — to conics. *Léauté, H.* C. R. 79 (1874) 93-, 602-; Toul. Ac. Sc. Mm. 8 (1876) 139-.
- , extension to skew curve. *Poincaré, H.* C. R. 100 (1885) 40-.
- Conchalic curves, trajectories and cissoids of 4th degree. *Huber, G.* Mn. Mth. Ps. 6 (1895) 157-.
- Conics, porism of 2. *Gundelfinger, S.* Crelle J. Mth. 83 (1877) 171-.
- Curves whose corresponding Abelian functions are of class  $p=2$ . *Clebsch, R. F. A.* [1868] Mth. A. 1 (1869) 170-.

- Curves, 2nd and 3rd degrees, parametric determination of points. *Juel*, C. Mth. A. 47 (1896) 72-.
- , 3rd degree, intersections with straight lines. *Laguerre*, E. [1875] Par. S. Mth. Bll. 4 (1876) 110-.
- , —, and their representation on circle. *Durrège*, H. Z. Mth. Ps. 17 (1872) 433-.
- , 6th degree, cases. *Roberts*, R. A. Mess. Mth. 15 (1886) 26-.
- Elliptic curves, equation giving points of inflexion. *Brioschi*, F. Mil. I. Lomb. Rd. 2 (1869) 559-.
- , plane. *Schlesinger*, O. Mth. A. 33 (1889) 444; 34 (1889) 463-.
- , reduction of linear systems, and general theorem on curves of genus p. *Guccia*, G. B. Palermo Cir. Mt. Rd. 1 (1887) 169-.
- function, 1st species, with any modulus, skew curves with arcs representing. *Molini*, H. Liouv. J. Mth. 4 (1878) 187-.
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- , cubic transformation, and skew curves of 3rd degree. *Dixon*, A. C. Mess. Mth. 23 (1894) 94-.
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- , —, Bobek, K. Casopis 12 (\*1883) 1-; Fschr. Mth. (\*1883) 407.
- , —, Pick, G. Wien Ak. Sb. 97 (1889) (*Ab. 2a*) 711-.
- , —, Kötter, E. Crelle J. Mth. 114 (1895) 170-.
- , —, —, 4th degree. Siebeck, H. Crelle J. 57 (1860) 359-; 59 (1861) 173-.
- , — of one parameter, curves with coordinates representable as. Clebsch, R. F. A. [1864] Crelle J. 64 (1865) 210-.
- , —, —, — (Clebsch's curves). Humbert, G. Par. S. Mth. Bll. 9 (1881) 166-.
- , —, expression of coordinates of bi-nodal quartic curve as functions of. Davis, E. W. Am. J. Mth. 5 (1882) 331-.
- and skew curves of 4th degree, 1st kind. Pick, G. Wien Ak. Sb. 98 (1890) (*Ab. 2a*) 536-.
- , trisection, applied to points of inflexion of cubic. Heinze, L. Arch. Mth. Ps. 70 (1884) 1-.
- and hyperelliptic integrals, application to rational curves. Laguerre, E. C. R. 96 (1883) 769-.
- Equation  $y^2 = x(x^2 - 1)$ . Burnside, W. [1892] L. Mth. S. P. 24 (1893) 17-.
- Eulerian integrals and sinusoid spirals
- $$\left[ \rho^n = \frac{(2\alpha)^n}{2} \cos n\phi \right].$$
- Loria, G. Prag Sb. (1897) (*Mth.-Nt.*) No. 18, 6 pp.
- Fuchsian functions. Humbert, G. Liouv. J. Mth. 2 (1886) 239-.
- of one parameter, expression of co-ordinates of curve by. Picard, É. C. R. 92 (1881) 1332-.
- Functional and invariant theory of binomial curves. Wellstein, J. Ac. Nt. C. N. Acta 74 (1899) 279-.
- Hyperelliptic curves. Bobek, K. Prag Ab. 1 (1886) No. 1, 27-; Wien Ak. Sb. 98 (1886) (*Ab. 2*) 601-; 94 (1887) (*Ab. 2*) 861-; 96 (1887) (*Ab. 2*) 31-; Mth. A. 29 (1887) 886-.
- , Valentiner, H. N. Ts. Mth. 10 (B) (1899) 51-; Fschr. Mth. (1900) 572-.
- , class of curves akin to. Bobek, K. Wien Ak. Sb. 98 (1890) (*Ab. 2a*) 141-.
- , genus 3, allowing automorphic transformations. Wiman, A. Stockh. Ak. Hndl. Bh. 21 (*Afd. 1*) (1896) No. 1, 23 pp.
- , special. Weltzien, C. Mth. A. 30 (1887) 535-.
- , transformation. Cremona, L. Mil. I. Lomb. Rd. 2 (1869) 566-.
- ,  $C^\infty$ , genus arbitrary. Küpper, C. J. Prag Ab. 1 (1886) No. 1, 26 pp.
- ,  $C^*$  with 18 given double points, system. Küpper, C. Prag Sb. (1898) (*Mth.-Nt.*) No. 1, 7 pp.
- functions of one parameter, curves with co-ordinates representable as. Brill, A. [1865] Crelle J. 65 (1866) 269-.
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- Parameters, representation of curves by. Enriques, F. Palermo Cir. Mt. Rd. 10 (1896) 30-.
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- Abelian functions and a class of representations of surfaces. Clebsch, R. F. A. [1870] Mth. A. 3 (1871) 45-.
- , genus 3, sextic surfaces associated with. Humbert, G. C. R. 120 (1895) 365-; Liouv. J. Mth. 2 (1896) 263-.
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- Abelian functions and Weddle quartic surface. *Caspary, F.* Bl. Sc. Mth. 15 (1891) 308-.
- Abel's theorem and surface generated by translation of curves. *Lie, S.* C. R. 114 (1892) 277-.
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- — — representation of Kummer's surface by. *Reichardt, W.* Ac. Nt. C. N. Acta 50 (1887) 873-.
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- — — — — (Jacobi). *Rubini, R.* Tor-tolini A. 2 (1851) 463-.
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$$\left[ \tan(u + na) = \frac{d(\rho^{n+1} \sin(n+1)a)}{d(\rho^{n+1} \cos(n+1)a)} \right] \text{ etc.}$$

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- Resal, H. A.* C. R. 85 (1877) 5-.

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- Enneper, A.* Gött. Nr. (1869) 62-.

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- Bordeaux S. Sc. Mm. 1 (1876) xlviii-; 2

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$$\int_0^x e^{-x^2} f(x) dx.$$

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$$\int_0^\infty [f(\sin ax, \cos ax) - f(\sin bx, \cos bx)] \frac{dx}{x} \\ = \frac{1}{2} \log \left( \frac{\beta}{\alpha} \right) [f(\sin 0, \cos 0) - A_0].$$

*Schlämilch, O. Grunert Arch.* 5 (1844) 152-.

$$\int_0^\infty \frac{x^{m-1} - 1}{1 - x^2} dx = \frac{\pi}{2} \cot \frac{m\pi}{2} \text{ if } 2 > m > 0.$$

*Zehfuss, G. Grunert Arch.* 30 (1858) 465-.

$$\int_0^{\frac{\pi}{2}} (2 \cos x)^{a+b} \cos(a-b)x dx. \text{ Lipschitz, R. O. S.} \\ \text{Bll. Sc. Mth. As. 5 (1881) (Pt. 1) 387-}.$$

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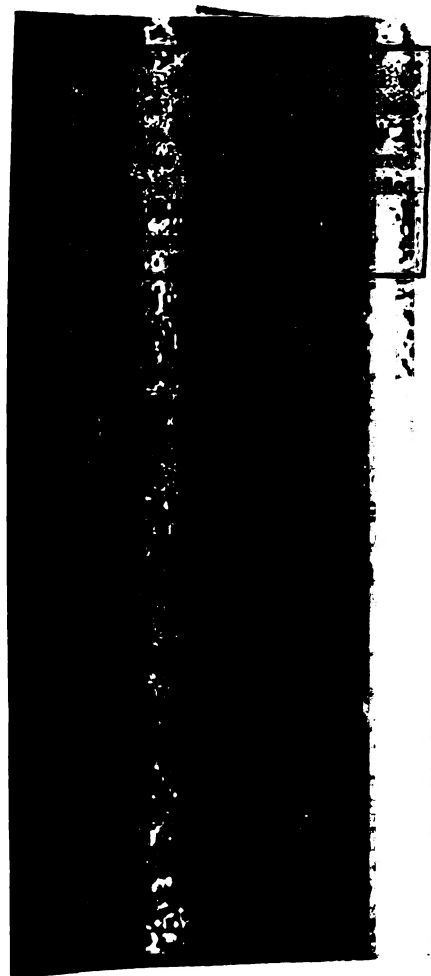
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